STATE OF INDIANA

MEMORANDUM

TO: LaPorte County Assessor, Shaw Friedman, and Thomas Atherton

FROM: David Schwab, Assessment Division *DVS*

DATE: May 20, 2008

SUBJECT: Analysis of Dr. Thomas Hamilton's Report on Sales Chasing in
           LaPorte County

Summary

- The Mann-Whitney test requires each sample to have approximately equal variances.

- The application of a Student's t-test, which does not require such equality, reveals sales chasing in 9 out of 19 tested townships.

- These townships are: Cass, Center, Clinton, Coolspring, Kankakee, Michigan, New Durham, Scipio, and Union.

- The remaining townships identified in the April 10, 2008 study have too great a difference in variance to allow for valid inference using the Mann-Whitney test.

- Dr. Hamilton's other claims are either incorrect or not supported by the evidence.

Introduction

At the LaPorte public meeting on May 15, 2008, Dr. Thomas Hamilton presented a report on behalf of the vendor Nexus. This report alleges several problems with the Denne study of sales chasing. By his own admission, Dr. Hamilton did not review the Department's study of sales chasing, although this study was (1) presented to Nexus on April 10, 2008 and (2) repeatedly referenced in Commissioner Musgrave's order for a public hearing. Nevertheless, it is prudent to address his claims regarding the Mann-Whitney test as a means to discover sales chasing.

In this memo, I address the claim that the Mann-Whitney test requires similarity among tested samples. This claim cannot be summarily dismissed with regard to sample

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variance; however, an alternative test recommended by the 1999 IAOO Standard—the Student's t-test—supports a conclusion of sales chasing in 6 of the 9 townships specified in the April 10, 2008 study.

The Mann-Whitney Test: Requirements

Dr. Hamilton claims that the Mann-Whitney test requires similarity among tested samples and will otherwise indicate sales chasing where none exists (Hamilton p. 5). He cites four journal articles and one statistics textbook to support this allegation. While nowhere near a thorough and unbiased literature review, these sources do focus his critique and provide a reference for reasoned analysis.

The similarity of statistical distributions can be described by their moments, of which Dr. Hamilton specifies three:

- Kurtosis: The extent to which the distribution is concentrated in its peak.

- Skew: The extent to which the distribution is concentrated on the left or right tail.

- Variance: The relative dispersion of the distribution.

Each characteristic can be calculated numerically with a modern statistics package. Dr. Hamilton asserts that as these three characteristics vary, the distributions in question become more dissimilar. This in turn leads the Mann-Whitney test to indicate sales chasing where none exists.

With regards to the variance, the cited literature and my own independent research support Dr. Hamilton's claim, and I conclude that the Mann Whitney test functions best when the two populations have approximately equal variance.

How far "approximately" extends is difficult to answer; while all statistical tests perform worse when their assumptions are violated, some perform better than others. The variance relation for the Mann-Whitney test is too complex to allow for easy calculation. Computer simulations, such as those cited by Dr. Hamilton, can tell us that variance matters but not by how much. Furthermore, no commonly accepted non-parametric test exists for testing the equality of variance.

With regards to kurtosis and skew the cited literature is not as kind. Only one article specifically tests the effects of violating the assumption of normality (technically defined as kurtosis = skew = 0). However, this article tests the effects of the Mann-Whitney test for robustness given known non-normal statistical distributions. There is no reason to assume that the data presented here assumes such a distribution, and the individual effects of kurtosis and skew are not evaluated. I therefore conclude that there is no reason to assume the Mann-Whitney test requires equality of kurtosis or skew.

The Appropriateness of the Student's t-test

Given the above findings, the appropriate action is to check for sales chasing using a Student's t-test. The Student's t-test is recommended by the IAAO as a parametric test for sales chasing (IAAO 1999, p. 47 [Table 5]). It specifically accounts for unequal sample variance, and is the most common statistical test, generally the first test learned in any undergraduate statistics course.

One would assume Dr. Hamilton is familiar with the Student's t-test, as it is the backbone of the statistical model presented in his dissertation (Hamilton 1997, p. 119 [Table 4.1]).

Unlike the Mann-Whitney test, the t-test is parametric; it assumes either that (1) the population is normally distributed, or (2) there are thirty or more observations per sample. In the latter case, the Central Limit Theorem asserts that the sample statistic (here the mean) will be normally distributed even if the population is not. As explicitly stated by the 1999 *IAAO Standard on Ratio Studies*:

> Parametric statistics make certain assumptions about the distribution of the population ratio or functions of the population ratios (mean, weighted mean, and so on). That is, in regard to mean or weighed mean ratios, **if the sample size is large enough (approximately thirty) and the sample is representative of the population, the distribution of sample means is approximately normally distributed regardless of the distribution of the individual ratios (Central Limit Theorem)**. When these assumptions are met, parametric statistics make more efficient use of the data than distribution-free statistics (p. 27, emphasis added)

Dr. Hamilton concurs, noting that:

> Traditional mass appraisal techniques primarily use multiple regression analysis (and other similar techniques such as feedback modeling) to obtain hedonic prices for property attributes. This process has a sound foundation in the literature as an efficient means to conduct mass appraisal assuming that the underlying regression assumptions are not violated. In short, if the sample from which the property characteristic values is sufficiently large and is truly representative of the population from which it comes, then the estimated coefficients from the sample are estimators of the corresponding population parameters (Hamilton 1997, p. 2).

Six of the nine townships identified in the Department's April 10, 2008 study—Center, Coolspring, Kankakee, Michigan, New Durham, and Scipio—clearly meet the requirements of a sufficient sample size. The remaining three townships—Galena, Hanna, and Washington—do not. Six townships—Cass, Clinton, Lincoln, Pleasant, Springfield, and Union—meet these requirements, yet were not identified in the Department's earlier study.

Given that (1) the Mann-Whitney test may prove inaccurate when samples variance is unequal, and (2) the Mann-Whitney test is less efficient than the Student's t-test (as specified by the 1999 IAAO Standard), a test of all 19 townships specified in the original study is clearly in order. Additional tests using the Mann-Whitney are warranted for all townships with less than thirty observations where sample variances are approximately equal.

Data

Data used for these tests came from two sources: the 2006 pay 2007 ratio study submitted by Nexus, and the Department's database of assessed values. The files used were:

- 2006 LaPorte Ratio Study RESUBMITTED Final 2_8_07 DLGF CALC.xls

- LaPorte_Sold_Data SBOA 2005 and 2006 assessed values.xls

- 2005_LaPorteParcels_AllOther.xls

- 2006_LaPorteParcels_AllOther.xls

As with the Department's April 10, 2008 study, data for unsold parcels was supplied by the latter two files. This data is submitted by the County Assessor to the Department and has never been disputed by either party.

All sold parcel numbers were taken directly from the 2006 pay 2007 ratio study file referenced above. That these parcel numbers are identical to those submitted by Nexus in their 2006 pay 2007 ratio study has also never been disputed by either party.

Due to confusion regarding the source of the assessed values in this ratio study—in particular, whether they represent assessor or auditor data—the Department compared the assessed values in the ratio study with the assessed values submitted by the County Assessor and stored in the Department's database. In other words, the assessed value of every residential improved parcel Nexus submitted for their 2006 pay 2007 ratio study was compared to the assessed value for that same parcel stored in the Department's database.

This comparison revealed numerous discrepancies between Nexus's data and the data possessed by the Department as submitted by the County Assessor. A full summary of these errors is beyond the scope of this memo: suffice to say that the assessed values submitted by Nexus failed to completely match data from either the assessor or auditor.

To remedy these errors while preserving the integrity of the ratio study, assessed values from the Department's database were matched parcel by parcel by computer to the parcel numbers provided by Nexus. In this way, the parcels used in Nexus's ratio study were

associated with their correct assessed value using data taken directly from the Department's database.

Findings

I next performed a Student's t-test on all townships in LaPorte County with more than thirty sold parcels. The results are presented in Table 1. Of the 12 townships examined, 9 tested positive for sales chasing: Cass, Center, Clinton, Coolspring, Kankakee, Michigan, New Durham, Scipio, and Union.

Springfield is the only township (1) identified in the original study and (2) with more than thirty parcels which fails to attain significance. Moreover, three additional townships—Cass, Clinton, and Union—are here identified.

I also performed a Mann-Whitney test on all townships with (1) less than thirty sold parcels and (2) a variance ratio of less than three. These townships are Dewey, Noble, and Wills. Sales chasing was not identified in any of these townships.

The remaining four townships—Galena, Hanna, Hudson, and Washington—fail to meet the criteria for either test. I cannot conclusively say that sales chasing has occurred in these townships.

Other Claims

Dr. Hamilton makes three additional claims about the accuracy of the Department's study:

1. The sample of unsold parcels is substantially larger than the sample of sold parcels.

2. The sample of sold parcels is not random.

3. The sample of sold parcels is not independent of the sample of unsold parcels. (Hamilton p. 5).

Regarding the first claim, Dr. Hamilton asserts that the substantial difference in sample size between sold and unsold parcels greatly increases the chance of falsely discovering sales chasing. I have been unable to find evidence that this is the case regarding the Student's t or Mann-Whitney test.

Regarding the second and third claim, Hamilton states that:

> Lastly, these tests typically assume that the data in the two groups are random events or variables. Sales of property are not considered random events, and the unsold properties are simply a function of those sales events (either a particular property sells or it doesn't—which is a binary

outcome—and the sold and unsold properties are not independent of each other) (Hamilton p. 5).

This statement represents confusion over the definitions of "random variable" and "independence." These are statistical terms with precise meanings:

- A **random variable** is a real-valued function of the experimental outcome.

- Two events are **independent** if the occurrence of one does not affect the occurrence or provide information about the occurrence of the other (Bertsekas and Tsitsiklis, 2002, p. 37, 72)

Clearly, sales are neither "random" nor "independent" in the colloquial sense employed by Dr. Hamilton. In the statistical sense they are both.

References

Bertsekas, Dmitri P. and John N. Tsitsiklis. 2002. *Introduction to Probability*. Athena Scientific: Belmont, MA.

Hamilton, Thomas W. 1997. "Sale Sample Data Limitations and Heteroskedasticity Effects on Property Tax Equity and Incidence." Dissertation (unpublished). Univ. of Wisconson-Madison.

Hamilton, Thomas W. 2008. "An Analysis of Ratio Studies & Sales Chasing Conducted by the Indiana Department of Local Government Finance and Mr. Robert Denne" Manuscript. May 15, 2008.

International Association of Assessing Officers. 1999. *Standard on Ratio Studies*.

Township	P-Value	Significant
Cass	0.0000	Yes
Center	0.0016	Yes
Clinton	0.0100	Yes
Coolspring	0.0258	Yes
Kankakee	0.0041	Yes
Lincoln	0.0940	No
Michigan	0.0228	Yes
New Durham	0.0000	Yes
Pleasant	0.0632	No
Scipio	0.0073	Yes
Springfield	0.1352	No
Union	0.0368	Yes

Table 1: Confidence Levels from Student's t-test, by Township (thirty or more parcels only)

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From:	Atherton, Thomas [TAtherton@boselaw.com]
Sent:	Wednesday, May 21, 2008 10:52 AM
To:	Rushenberg, Tim
Cc:	Shaw Friedman
Subject:	Rebuttal to Hamilton Critique
Attachments:	HamiltonRebuttal20080520.doc

At the May 15 hearing, Nexus and/or La Porte County presented a statistical commentary prepared by Dr. Hamilton dealing with the Nexus methodologies and the previous analyses prepared by the DLGF and Mr. Denne. It was our understanding that the parties were to have presented their analyses of the Nexus assessment methodologies several weeks ago. Nonetheless, I assume that the DLGF will consider the Hamilton report even though it was "late-filled." On that assumption, we are filing Mr. Denne's insights into Dr. Hamilton's report.

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Memorandum

Date: 20 May, 2008

To: William H. Wendt
        Tom Atherton

From: Robert C. Denne

Re: Hamilton presentation of 15 May, 2008

Hamilton challenges both the sales chasing findings reported by Denne (ignoring the similar findings by DLGF) and the non-compliance findings of both Denne and DLGF, reported separately. In so doing he makes false assertions and serious misrepresentations, the former particularly in respect of the statistics of detecting sales chasing and the latter more generally, including his discussion of adjusting sales for time in ratio study analyses. I discuss both broad issues in more detail below. In general, Hamilton's claims are baseless and should be dismissed across the board.

1.   Alleged invalidity of the use of the Mann-Whitney test to conclude that selective reappraisal of properties (sales chasing) has invalidated the usual ratio study performance measures.

In a sense Hamilton's mathematical and statistical arguments along these lines are irrelevant, since (1) IAAO, the preeminent professional organization in the field, has reaffirmed the use of the Mann-Whitney test for such purposes as recently as June 2007, substantially postdating any criticisms of the test that Hamilton has cited, and (2) the test is incorporated into Indiana law by reference to the 1999 version of the IAAO standard, and not subsequently repudiated. Nevertheless, since Hamilton asserts that the use of the test may "violate the necessary and irrefutable statistical properties necessary to properly implement the test" (p.32), his allegations will be addressed substantively below.

1.1   Hamilton alleges that the test requires samples of approximately the same size to be valid.

This is nonsense:

1.1.1   The entry for the test in the internet Wikipedia gives a hint for a possible source of Hamilton's mistaken belief when it notes: "It was proposed initially by Wilcoxon (1945), for equal sample sizes, and extended to arbitrary sample sizes and in other ways by Mann and Whitney (1947)."

1.1.2   The *Encyclopedia of Statistical Sciences* 2nd Edition, Wiley (16 volumes), 2006, makes no mention of such an alleged requirement in its discussions of the test.

1.1.3   Like the Encyclopedia of Statistical Sciences, recent authoritative texts such as Hollander and Wolfe's, *Nonparametric statistical methods,* 2nd ed., Wiley, 1999 and Sprent and Smeeton's, *Applied nonparametric statistical methods,* 4th ed., Chapman & Hall CRC, 2007, make no mention of such a requirement for the test.

1.1.4   Hamilton's own constructed examples, particularly number 2 on page 42, bear out that the test appropriately does not reject the hypothesis of no difference even when the sample sizes differ greatly. (His examples 1 and 3 serve only to demonstrate that hugely biased samples will give erroneous results, hardly an informative finding.)

1.2   Hamilton alleges that the underlying shapes of the two distributions must be similar for the test to be valid.

This assertion is untrue in general, although the source of Hamilton's misconception may have been discovered. Mann and Whitney introduced their test with the following two sentences: "Let x and y be two random variables with continuous cumulative distribution functions f and g. A statistic U depending on the relative ranks of the x's and y's is proposed for testing the hypothesis $f = g$." Thus it can be seen that the test originally was, and has always been, a test of the cumulative distribution functions, that is, the shape of the distributions. The test was later also used as a test of one element of such distributions: the middle value or median. More recently it has also been applied to test for differences in means, which are more highly influenced by extreme values than the median is. The following suggestive passage appears in the recent book by Paul H. Kvam and Brani Vikadovic, *Nonparametric statistics with applications to science and engineering,* Wiley, 2007. "Like the Wilcoxon test above, the Mann-Whitney test is applied to find differences in two populations and does not assume the populations are normally distributed. However, if we extend the method to tests involving population means instead of just [cumulative distribution functions]), we need an additional assumption: the shapes of the two distributions are identical." (p.131-2).

The five references cited by Hamilton on his pages 26-27 bear out the supposition that it is in the extension of the Mann-Whitney test into the domain of location statistics, such as the mean or median, rather than in the application of the test to the cumulative distribution function, that concern over the shape of the distribution arises. It is fundamentally impossible for the two cumulative distributions to be the same and simultaneously to have appreciably different variances. To say that the two sets of data have different distributions is in and of itself an admission that they were not drawn from the same distribution, or to put it more plainly, that the treatments of the sold and unsold properties were not the same. Effectively, Hamilton has admitted defeat on the larger sales-chasing issue by raising the technical issue of differing variances. Any claim that the Mann-Whitney test does not apply constitutes an admission that the two data sets are not drawn from the same distribution, since that is exactly what the Mann-Whitney procedure tests for.

As the Mann-Whitney test is used in testing for sales chasing, the existence or non existence of differences in the mean, or even the median, is completely irrelevant. It is the existence of persuasive evidence for the proposition that sold properties have been treated disproportionately to unsold properties that matters, since such lack of proportionality can contaminate measures calculated from the sold properties and prevent them from being validly applied to

the vast majority of (unsold) properties in the jurisdiction. The distributions of percentage changes in the assessments of sold and unsold properties are what is at issue. This proposition is clear from litigation in federal courts in connection with the Railroad Revitalization and Regulatory Reform (4R) Act. When ratio studies of commercial and industrial property are offered into evidence and the facts show that a substantial number (but fewer than half) of the assessment-to-sales-price ratios for sold properties have been affected by changes to the assessment since the year preceding the sale, but essentially none of the assessments of the unsold properties were changed in the same time period, the evidence is persuasive that sales chasing has occurred. This commonsense conclusion is buttressed and formalized by Mann-Whitney analyses of percentage changes in assessments from year to year for sold versus unsold property. Note that in the situation just described the medians of assessment changes, as a percentage, were identical and equal to zero for both the unsold properties and those that were recently sold. To be clear, neither disparate means nor medians are required for a valid finding of sales chasing – any disproportionate treatment of sold and unsold property will invalidate any attempt to apply statistics calculated from the sample of sales to the larger set of all properties in the tax base. Certain compliance statistics, particularly the coefficient of dispersion, can be dramatically manipulated by changing only one or a few assessments on sold properties and ignoring the requirement to similarly change the assessments on all other comparable (unsold) properties. The irrelevance of the means and medians to the issue of sales chasing, in addition to disposing of the fallacious allegation that the Mann-Whitney test requires similar distributions to be valid for purposes of testing for sales chasing, should also put to rest Hamilton's observation that "the oversight agency should develop a tolerance level that is acceptable, regardless of the statistical evidence." (p. 30).

In the course of arguing that the distributions of sold and unsold properties are different and hence not subject to analyses based on the Mann-Whitney test, Hamilton curiously analyzes variables of dubious relevance. Hamilton finds what he perceives to be persuasive differences between the distributions of assessed values for sold and unsold properties. Yet the Mann-Whitney tests used both by Denne and by DLGF featured no analysis of such data. Rather the Denne and DLGF sales-chasing analyses were of the <u>percentage changes in assessed values</u> of properties from assessment year 2005 to assessment year 2006, testing to see whether recently sold properties were changed disproportionately relative to the changes made to unsold properties. Denne also analyzed other lines of evidence for sales chasing. These included disproportionate incidences of changes being made to certain subjective characteristics of properties that often serve as markers for sales chasing, as between sold and unsold properties. He also did Chi-square analyses of counts of other assessment changes as between sold and unsold properties. All of these pointed to sales chasing, but were unaddressed in Hamilton's critique.

1.3   Hamilton alleges that lack of random sampling invalidates the tests.

At page 4 Hamilton says: "these tests typically assume that the data in the two groups are random events or variables. Sales of property are not considered random events, and the unsold properties are simply a function of these sales events (either a particular property sells or it doesn't – which is a binary outcome – and the sold and unsold properties are not independent of each other)." This is a very curious assertion, since if accepted it would serve to invalidate any attempt to measure assessment performance using sales data. Fortunately for oversight

agencies everywhere, Hamilton's proposition is pretty universally rejected, not only among property tax administrators but also among authors of leading textbooks on statistics.

In writing about the applications of the Mann-Whitney test, leading authors routinely reject Hamilton's assertion. W. J. Conover in *Practical nonparametric statistics*, Wiley, 1980 and 1999, says "Although primarily a two-sample test, the Mann-Whitney test may be applied in many different situations other than the usual two-sample situation," and goes on to illustrate it with a high school class of boys who are either farm boys or city boys. Sidney Siegel in *Nonparametric statistics for the behavioral sciences*, McGraw Hill, 1956 and 1988, similarly analyzes societies that are bifurcated based on a certain trait, while Sprent and Smeeton in *Applied Nonparametric statistical methods* 4th ed., Chapman & Hall CRC, 2007, and Hollander and Wolfe in *Nonparametric statistical methods* 2nd ed., Wiley, 2007 also present examples of data sets split by the value of a trait rather than solely applying the test to two independent samples.

Hamilton's concern with distinguishing the population from a sample and his consequent suggestion that "several random samples of approximately equal size should be selected from the entire population and the various random samples should be selected with replacement..." is thus seen as misguided both in consequence of the denigration of the need for two random samples noted immediately above and the appropriateness of focusing on the entirety of the two distributions noted in the previous section. Sampling from the population does nothing but reduce the reliability of the analyses.

There is one sense in which it is appropriate to take steps to ensure that the bifurcated data set being analyzed is an appropriate sample of the population, but here, too, Hamilton appears to get things wrong. In both the Denne and DLGF analyses of percentage changes in assessed values for sold and unsold properties, the data sets were purged of properties that had experienced new construction or major changes before the analyses were undertaken. This was done in order to prevent their atypical percentage changes in assessment from obscuring what was happening with the vast bulk of properties in the tax base. Hamilton, in contrast, seems not to have taken similar steps in developing the profiles he reports at length, and for dubious purposes, on pages 33-40.

It may also be worth noting that one of the very sources that Hamilton cites (see the top of his page 28), namely www2.chass.ncsu/garson/pa765/mann.html, provides a useful definition of the "independent sample" requirement that could have kept Hamilton out of trouble. In particular the author of the site says: "Samples are independent if the response of the nth person in the second sample is not a function of the response of the nth person in the first sample. Independent samples are also called *uncorrelated samples* and *unrelated samples*. Samples which are <u>not</u> independent include before-after and panel studies of the same people, or matched-pairs studies of similar people."

Finally, as all practitioners surely know, sales are appropriately treated as random samples inasmuch as properties, with the notable exception of new construction, can be considered as a universe, each with some probability of being sold in a given interval, much as each radioactive nucleus may be subject to beta decay. Which particular one (property or nucleus) will be affected in a given span is generally unknowable, and in the case of real estate there may be differences in rates among the classes of properties, but the randomness necessary for the useful application of statistical principles is certainly available.

1.4   Hamilton finds relevance in the time period between valuations in testing for sales chasing.

Although he does not embrace the unsupported arguments of Kelly and Wuensch that the IAAO standard places any significance on the period of time between reassessments in testing for sales chasing, Hamilton does comment obliquely on the issue. At page 30 he says, "[a]s the time period lengthens between valuation periods th[e] requirement … that the distributional shapes and measures of the parcels' distribution are similar either between analysis periods and/or between the sold and unsold parcel groups (or samples) … is more likely not to be met." Such concerns are unfounded and not recognized either by IAAO or by any known responsible writer on the subject.

In summary, Hamilton has raised a number of spurious objections to the testing of assessments for the effects of disproportionate changes to assessments of sold properties relative to unsold properties, colloquially known as sales chasing, and specifically to the use of the well known and widely recommended Mann-Whitney test in that regard. In so doing he disputes the relevant professional and regulatory bodies, such as IAAO and the government of Indiana, and flies in the face of the literature of professional statisticians. His conclusions and advice should be rejected.

2. Alleged invalidity of third-party ratio studies indicating non-compliance of La Porte assessments for 2006

2.1 Hamilton conflates market adjustment factors (MAFs) used for appraisal purposes with time adjustments used in ratio studies to conform sales occurring over a period of time to the appraisal date.

The use of a single index for purposes of adjusting sales that may have occurred at different points in time reflecting different price levels to a common point in time is far more common than Hamilton supposes; his suggestion that a "matrix of differential vector indices (plural) for the numerous classes and types of property in La Porte County" would be used for such purposes (p.21) is risible. Given the high coefficients of dispersion revealed by the assessment ratio study, there is far too much noise in the data to permit the development of multiple adjustment indices for the period at hand. Recall that the only real necessity for an adjustment index is in connection with adjusting the sales from 2006 back to January of 2005 to reflect the appraisal date. Such adjustments were necessary because the sales from the period spanning that date, 2004-2005, could not be validly used as contemplated for several reasons: first the property characteristics of most sold properties were noted to have changed and second there was an irrefutable discovery of sales chasing. The short period of time involved, when considered in conjunction with the moderate level of adjustments involved (varying from about six percent in January to almost eleven percent in December), and the uniform treatment of all property, surely fails to rise to a level of interest, to say nothing of Hamilton's judgment that the issue constitutes a fatal flaw in the ratio study. The only reasonable issue arising from the index used in the sales time-adjustment methodology lies in the sensitivity of close decisions on assessment-level-compliance failures to the reliability of the index.

2.2 **Hamilton misleads with irrelevant and inflammatory exhibits**.

Hamilton presents price index data from the S&P 500 to illustrate the point that the price trend for one individual stock can deviate markedly from the trend evident for a larger collection of stocks of which it is a constituent part. This demonstration of the Central Limit Theorem has no relevance. He also presents trends from the Case-Schiller real estate index for the Chicago metropolitan statistical area (which was not used by any study at issue here) to illustrate a similar point – that different tiers of the market can diverge somewhat from the overall trend, although to my eye the similarities are remarkable. He also presumably would like to draw attention to the volatility of the index evident in the saw-tooth pattern of ups and downs present in the monthly data for his chosen index. The OFHEO index actually used for the study he seeks to criticize, however, differs from his straw man in several important respects: (1) it is more relevant, being specific to the LaPorte area rather than Chicago, (2) it is a smoother quarterly index rather than a jagged monthly index, and (3) the direction reversals associated with seasonality are more limited, there being only two drops during the period January 2005 to December 2006, and the declines were on the order of less than two percent in both cases. Thus the use of the index would not have injected any appreciable random element into the measurement of prices as might have been inferred by an observer examining Hamilton's charts on pages 16-19 with their exaggerated scale.

In general Hamilton's criticisms are misplaced, appear to be directed to the goal of discrediting a set of findings offered by one or more perceived adversaries rather than objectively determining the facts, and should be rejected.

MEIGHEN & ASSOCIATES, P.C.
ATTORNEYS AT LAW

May 21, 2008

Hand Delivered

Cheryl Musgrave, Commissioner
Tim Rushenberg, General Counsel
Department of Local Government Finance
100 North Senate Avenue N1058B
Indiana Government Center North
Indianapolis, IN 46204

Re: Reassessment of LaPorte County / Tax Year 2006

Dear Commissioner and Counsel:

Please include this letter and its attachments into the record of administrative proceedings regarding the proposed reassessment of LaPorte County, Indiana, for the March 1, 2006 assessment date. Included herein are responses to Mr. Schwab's statements at the May 15, 2008 hearing and his later analysis provided the afternoon of May 20, 2008.

Initially know that neither LaPorte County officials nor Nexus are advocates for anything other than an accurate, uniform, and fair assessment of all LaPorte County taxpayers. Such assessments depend on competent, straightforward work product repeatedly proved to exist by LaPorte County; proved by the State's leading property tax consulting firm and a nationally published author in statistical analysis regarding assessment equity. The DLGF approved the 2006 County ratio study twice. Approval was the basis for preparation of tax bills; related certification of tax rates by the DLGF; and, the approval, issuance, and payment of tax bills. Now LaPorte County is faced with an unprecedented re-re-re-review of the 2006 ratio study by the DLGF. Plainly, this latest review is fraught with incompetent work product, studies with no reliability, and tests that do not have the correct statistical foundation. When one test or study is abandoned or dismissed, the DLGF simply substitutes another. Despite the DLGF's continuous search for something . . .anything . . wrong with assessments in LaPorte

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County, the agency can't find it. The DLGF is an activist for reassessment, not accurate and just property tax assessments. This is not good government and is not in the interest of the taxpayers of LaPorte County.

The Legitimate Issues In This Reassessment Matter

To repeat, the DLGF has twice approved LaPorte County's 2006 ratio study. The prior findings by the agency are given great deference and are presumed valid. A heavy burden of proof rests with the DLGF to overturn two separate approvals of this agency which were relied up by LaPorte County, if the agency can overturn its prior decisions at all.

The County finds itself in the unique situation of a third review by the DLGF of the County's 2006 ratio study. The DLGF first approved the County study in March, 2007. Its second approval was in September, 2007. With these prior approvals, the DLGF has waived its right to issue reassessment and is barred by laches and estoppel from so doing.

LaPorte County has repeatedly argued that the DLGF is acting against the County in a biased, partial, and predisposed way regarding reassessment for the March 1, 2006 assessment date. Ignoring these issues for the moment, another issue is the statistical accuracy of the March 1, 2006 real property assessments. Quite simply, there is a lack of reliable and competent statistical evidence to support a reassessment. The history of the statistical evidence is telling.

On March 4, 2008, the DLGF provides the parties with its first ratio study which is incompetent work product, i.e., sales dates not sales amounts were used for ratio purposes. Nexus informs the DLGF of the multiple flaws in the agency's study and the study is withdrawn.

In her letter dated April 10, 2008, Commissioner Musgrave wrote that the Mann-Whitney statistical test reveals a likelihood of inequality between sold and unsold improved residential properties in nine townships of LaPorte County.

On April 14, 2008, the DLGF forwards its second ratio study to the parties. Nexus identifies the flaws of the second study, and the DLGF refuses to even correct its math errors. After various errors are corrected, and even ignoring the failure to account for outlier data, the failure to expand sample size, and the improper use of Auditor billing data as the comparative measure, the DLGF's second ratio study finds only two small property classes with possible assessment issues.

On May 1, 2008, the DLGF issues in resolution of reassessment basing its findings on alleged sales chasing on the Mann-Whitney statistical test.

On May 15, 2008, Dr. Thomas Hamilton presents to the DLGF his analysis of the Denne ratio study and Denne's statistical tests on sales chasing. Dr. Hamilton is an IAAO-award winner for assessment research and a nationally published author in statistical analysis regarding assessment equity. Dr. Hamilton's analysis of the Denne ratio study finds no reliability in the adjustment process enacted by Mr. Denne. Dr. Hamilton dismisses the Denne study. Dr. Hamilton's analysis of Mr. Denne's statistical tests on sales chasing finds that Mr. Denne's tests are not valid indicators of sales chasing. The tests used by Mr. Denne do not have the correct statistical foundation.

On May 20, 2008, the DLGF agrees that the Mann-Whitney statistical test cannot be used even though Mann-Whitney was the basis of its reassessment resolution. The DLGF issues a May 20, 2008 memorandum wherein Dr. Schwab uses another test, the Student t-test, for analysis of the situation. Dr. Hamilton has reviewed and analyzed Dr. Schwab's work, and finds it improperly conducted. Dr. Hamilton's "An Analysis of Parametric Sales Chasing Studies Conducted by the Indiana Department of Local Government Finance" and his "Statement on the Proper Use of Mann-Whitney U-tests" are attached hereto and labeled Exhibits A and B, respectively. In very general terms, Dr. Schwab's Student t-test is grossly wrong with statistical error. Dr. Schwab makes radical and incomplete assumptions about invoking the Central Limit Theorem to justify use of the parametric analysis. T-tests require a normal distribution of data and the data in LaPorte County are not normally distributed (nor would one expect them to be normally

distributed). Absent normal distribution, Dr. Schwab attempts to use the Central Limit Theorem but does not conduct repeated random sampling as required.

In short, Mr. Denne's work regarding sales ratios and sales chasing is abandoned. The Mann-Whitney statistical test – once the basis for reaasessment – is dismissed by the DLGF as an inappropriate statistical test. The DLGF's first ratio study is withdrawn. Dr. Schwab's Student t-test is conducted so as to justify reassessment, but the test is grossly in error and improperly conducted. All that remains is the DLGF's second ratio containing mathematical errors and failing to take outlier data into account, failing to expand sample size, and improperly using Auditor data as the comparative measure. [1] Even with these flaws, and after correcting math errors, the DLGF's second ratio study finds only two small property classes with possible assessment issues.

Given the lack of reliable and competent statistical evidence to support reassessment, the DLGF raises two new issues for the very first time at the May 15, 2008 hearing. The DLGF is now in a quandary about the contract between the LaPorte County Commissioners and Nexus (the Contract) entered into almost four years ago, a contract over which the DLGF had no authority until 2006 but which was nevertheless submitted to and approved by the DLGF in 2004. Also at the May 15 hearing, the DLGF made a conclusory statement that the cost tables used for the March 1, 2006 trending do not conform to State law.

After the May 15, 2008 hearing, Commissioner Musgrave is quoted by the media as taking into account the "overwhelming majority" of people in favor of reassessment. *The News-Dispatch,* May 16, 2008, attached Exhibit C. Reading Commissioner Musgrave's media comments gave the County its first indication that public opinion on reassessment is a consideration in this matter. Now that the County knows that public

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[1] The 2006 ratio study was based upon data at that time. Since the ratio study was conducted data have changed for multiple reasons such as changes in assessed value as the result of appeals. The DLGF's second ratio study uses data available after the ratio study was completed. It is not logical to suggest that assessments are not fluid and the assessment / appeals process should completely shut down once a ratio study is submitted. It is improper for the DLGF to use later data to test ratio studies. Perhaps the DLGF should require multiple ratio studies, i.e., one study before trending, another study after trending, and another using the exact data used by the Auditor to send tax bills.

opinion regarding reassessment is being taken into account, the County asks that the *facts* be examined:

- The total number of people speaking at the both the March 13, 2008 and May 15, 2008 public hearings is 57;

- The 2006 estimated population of LaPorte County is 110,106; [2]

- The percent of the population that spoke at either hearing is 0.0515, or five hundredths of 1%; and,

- 77% of the population is opposed to reassessment, while only 23% of the population is in favor of reassessment. *The News-Dispatch,* May 17, 2008, attached Exhibit D.

The Contract Between LaPorte County Commissioners And Nexus

The eleventh hour issue concerning the validity of the Contract is forged and cannot be used to support a reassessment or otherwise. It is simply too late for the DLGF to flip-flop on the Contract submitted and approved by the DLGF in 2004 with no challenges whatsoever by the agency until May 15, 2008. The DLGF's last minute questioning of the Contract signals the DLGF's campaign for reassessment. The agency's approval of a contract is meaningless and no county and vendor can rely upon past actions of the agency. This is inapposite to logical and sound business practices and good government. The Contract issue is off the table and cannot even be considered by the DLGF for the following reasons:

1. *The statutes setting forth contractual requirements do not include annual adjustments and the administrative rules did not make these contract requirements applicable to annual adjustment contracts until 2006. Despite statutory and administrative silence, LaPorte County submitted the Contract to the DLGF and the Contract was approved in 2004. Agency approval meets statutory requirements.*

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[2] The 2006 estimated population of LaPorte County, Indiana according to the U.S. Census Bureau. http://quickfacts.census.gov/qfd/states/18/18091.html

The Contract is a professional services agreement calling for professional services requiring technical judgment and for Nexus to provide advice based on skills and experience. Though the DLGF has some oversight over assessors, its oversight is not unlimited. Much like the DLGF does not have the authority over the hiring and contracting by LaPorte County of Dr. Hamilton to provide expert advice regarding this reassessment matter, the agency does not have the authority to control LaPorte County's hiring of Nexus to provide professional expert advice, at least not until 2006 at which time contractual requirements were written into administrative rules and specifically included in the general reassessment fund statute, Ind. Code § 6-1.1-4-28.5(a)(6).

Annual adjustments were established by Ind. Code § 6-1.1-4-4.5, effective January 1, 2002. The statute also obligated the DLGF to adopt rules for annual adjustments. The DLGF adopted Equalization Standards to establish procedures and standards for adjustments of real property value. 50 IAC 14, filed July 26, 2002.[3] 50 IAC 14 makes no mention of any requirements for annual adjustment contracts. Though changes were made to the administrative rules regarding adjustments to value throughout the years, the 2003, 2004 and 2005 editions of the rules make no mention of any requirements for annual adjustment contracts. For the very first time in 50 IAC 21-1-2.1, filed March 10, 2006, the DLGF applies the contractual requirements of Ind. Code §§ 6-1.1-4-17 through 6-1.1-4-19.5 to annual adjustment contracts. DLGF silence regarding the applicability of the statutes is given weigh and raises a strong presumption of acquiescence.

The contractual requirements found in Ind. Code §§ 6-1.1-4-17 through 6-1.1-4-19.5 address contracts for assessments and reassessments, these terms used either together in concert or separately. The statutes do not include annual adjustment contracts, "annual adjustments" being a term of art having a peculiar and appropriate

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[3] The purpose of 50 IAC 14 is to establish procedures and standards to be used in the adjustment of assessed value under Ind. Code § 6-1.1-13 which pertains to equalization. The "trending" statute, Ind. Code § 6-1.1-4-4.5, is not specifically mentioned in 50 IAC 14. However, it must be 50 IAC 14 pertains to annual adjustments, or the agency did not comply with legislative directive until 2006, four years after the legislature directed the agency to so do.

meaning in law which is understood according to its technical import. Statutory silence of annual adjustment contracts presumes exclusion of them. The DLGF did not find these statutory requirements applicable until 2006, two years after the Contract was submitted and approved by the DLGF, and two years after legal rights of both the County and Nexus attached.

Despite silence in the statutes and by the agency, LaPorte County did not hide the Contract from the DLGF. The Contract was given to the DLGF and was approved by the agency in 2004. Even assuming *arguendo* agency authority over the Contract and that statutory requirements applied to annual adjustment contracts when the Contract was executed, the law only requires contracts to be a standard model contract developed by the DLGF *or a contract which is specifically approved by the DLGF.* Ind. Code § 6-1.1-4-18.5(a). The Contract is legal and binding for many reasons, including the direct approval of the Contract by the DLGF.

The DLGF cannot turn back time and pretend that requirements currently in place should be applied to earlier legally binding documents.

2. *The LaPorte County Superior Court has already ruled upon the validity of the contract.*

The validity of the Nexus Contract has already been upheld by the LaPorte County Superior Court in *Connor, et al v. McDaniel, et al.,* Cause No. 46D02-0709-PL-129, decided March 7, 2008, a copy of which is attached as Exhibit E.[4] The DLGF does not have the authority to counteract or ignore courts.

3. *The inexcusable delay by the DLGF of even questioning the Contract at this late date is barred by laches and estoppel.*

The issue emanates from the DLGF's sudden flip-flop years after it approved the Contract. Even during the agency's review and re-review of LaPorte County's 2006 ratio study (resulting in approvals of the ratio study in March 2007 and again in September

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[4] A Notice of Appeal From Trial Court was filed by plaintiffs on April 3, 2008.

2007), the issue of the Contract was not raised in any way. If a quandary truly exists regarding the Contract, then exactly where was the DLGF in 2004, 2005, 2006, and 2007?

The County and Nexus relied upon the approval of the Contract. Since approval of the Contract almost four years ago, the Contract has been the catalyst for services which have provided the basis for preparation of tax bills; the related certification of tax rates by the DLGF; and, the approval, issuance, and payment of tax bills, all without DLGF challenge to the validity of the Nexus Contract. Nexus has performed years of work for LaPorte County and has foregone considerable other work to its significant financial detriment as a result of the Contract. The County has paid for these services and any declaration that the Contract is illegal and void would result in a huge financial cost should the work previously done under the Contract be required to be repeated, a cost in addition to the costs of this proposed reassessment action based upon incompetent and unreliable tests and studies. Further, the taxpayers of LaPorte would be thrown into even more confusion by having values changed and new taxes figured at this late date. The inexcusable delay by the DLGF of even questioning the approved Contract at this late date is barred by the doctrine of laches and estoppel.

"The rationale behind the doctrine of laches is that a person who, for an unreasonable length of time, has neglected to assert a claim against another waives the right to assert his claim when this delay prejudices the person against whom he would assert it." *Storm, Inc. v. Indiana Department of State Revenue*, 663 N.E. 2d 552, 557 (Ind. Tax Ct. 1996). The defense of laches has three elements: (1) inexcusable delay in asserting a right, (2) an implied waiver arising from knowing acquiescence in existing conditions, and (3) circumstances resulting in prejudice to the adverse party. *Id.* Due to the inexcusable delay by the DLGF in raising the question of the Contract, the doctrine of laches applies. The services rendered by Nexus have been ongoing for nearly four years with tax bills mailed and paid. Any action by the DLGF now would do substantial injustice to County government, LaPorte taxpayers, and Nexus.

In addition to the elements of laches set forth above, estoppel has the additional element of reliance. *Shearer v. Pla-Boy, Inc.* (1989), Ind. App. 538 N.E. 2d 247, 254. It is obvious from the work performed by Nexus and the preparation of tax bills and the like generated by the County over the last four years that they relied, to their detriment, upon the approved Contract which the DLGF now seeks to invalidate. The DLGF is estopped from invalidating the Contract.

The Conclusory Statement About Cost Tables

Also for the very first time at the May 15, 2008 public hearing, the conclusory statement was made that cost tables used for the March 1, 2006 assessment date do not conform to state law. It is difficult to respond to conclusions; however, it is reasonably believed that the conclusion is made because the County did not exclusively use Marshall and Swift cost and depreciation tables for tax year 2006. 50 IAC 21-5-2 permits counties to use data and other information other than just Marshall and Swift in cost and depreciation tables. The DLGF's current campaign goes against its own rules, prior statement by counsel, and the Indiana Tax Court.

50 IAC 21-5-2 reads that assessing officials may apply an annual adjustment factor. If there are insufficient sales, assessing officials *shall* derive annual adjustment factors or modify values of commercial and industrial property based upon one or more of the following: (1) Marshall and Swift cost and depreciation tables from the first quarter of the calendar year preceding the assessment date, (2) income data, rental data, market value appraisals, and other relevant evidence derived from appeals of the 2002 reassessment and adjusted, as applicable, to the January 1 of the year preceding the assessment date, (3) commercial real estate reports, (4) governmental studies, (5) census data, (6) multiple listing service (MLS) data, and (7) independent study performed by the Indiana Fiscal Policy Institute.

Renee Lambermont, former attorney for the DLGF, wrote that Marshall and Swift tables are not the only source that counties may use in annual adjustments or modification of value. Series of emails attached as Exhibit F. Ms. Lambermont's statements

regarding use of additional data and information is permitted by 50 IAC 21-5-2 and are consistent with Tax Court precedent, i.e., *P/A Builders & Developers, LLC v. Jennings County Assessor,* 842 N.E. 2d 899 (Ind. Tax Ct. 2006), *review denied,* holding that assessors shall adjust assessments to comply with the definition of market value-in-use. Making adjustments and modifying value plainly adheres to administrative rule and also to the fundamental principal enunciated by the 2002 Real Property Assessment Manual and the Court; namely: the goal of Indiana's property tax system is to arrive at the correct assessment of properties using objective and verifiable data.

Conclusion

There is no competent and reliable evidence upon which to base reassessment.

Respectfully submitted,

Marilyn S. Meighen

Karvel-Hamilton

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An Analysis of Parametric Sales Chasing Studies
Conducted by the Indiana Department of Local Government Finance

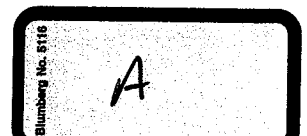Data for LaPorte County, Indiana:
2005 and 2006 Assessment Data

May 21, 2008

Prepared by:

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Executive Summary

In Dr. Schwab's May 20, 2008 "Analysis of Dr. Hamilton's Report on Sales Chasing in LaPorte County Indiana", there are numerous questions raised. I will list them and then explain them individually. In summary, the parametric analysis proposed by Dr. Schwab is not conducted properly. He makes radical and incomplete assumptions about invoking the Central Limit Theorem to justify the use of parametric tests when a simple normality test shows that the parametric test used (the t test), cannot be reliably applied to the LaPorte County data. Again, there is no statistical evidence of sales chasing present in the data that would justify a complete reassessment of LaPorte County. The final two pages of this report contain my analysis of the original sales chasing arguments from the April 10, 2008 DLGF Report by Dr. Schwab.

Analysis

The items raised by Dr. Schwab in the May 20, 2008 "Analysis" that I will address are:

1. Shape of the sold and unsold properties' distributions
2. Appropriateness of the student t test
3. Differences in size of sold and unsold parcel counts
4. Sold properties are not obtained in a random manner (random)
5. Sold and unsold properties are not independent of each other

Item #1: Kurtosis, skew and variance describe the "shape" of a distribution and are called moments of a distribution and they give the data distribution its "shape". Central tendency (mean, median or weighted mean) is another "moment" which Mann-Whitney is testing in a sales chasing analysis when the "shape" of the sold and unsold properties' distributions are similar. (The Central Moment is zero, or the difference between the observed and hypothesized value, or the difference between sold and unsold property's means which, if equally treated would be zero). So, if skew and kurtosis are different between the sold and unsold properties distributions, their shapes differ. Obviously, if variance is different, shapes will also be different. Holding shape constant (i.e., where there is no difference evident in the sold and unsold properties' distributions), differences in central tendency can be properly tested using Mann-Whitney.

Item #2: Parametric inferential statistics are mathematical procedures for statistical hypothesis testing. These procedures assume the distributions of the variables being tested belong to known "parametrized" families of probability distributions. One such distribution is the standard normal distribution which is in the normal distribution family. The student t test is a valid method to use to test for differences in data where the data conform to a strict set of distributional requirements for the normal distribution. The student t distribution will approximate the normal distribution when a sufficient number of sample data are repeatedly drawn at random, and with replacement, from a given population of data. (A single draw from the population is but one indicator of the true, but unknown, population's distribution. A sold property set is a single draw and insufficient for invoking the Central Limit Theorem.) When repeated numerous times, the central tendency of the random draws' means will approach the true population's mean. Also the variance of the repeated random sampling of means will approach the population's variance. Again, a single draw (the universe of sold properties in a Township, for example) is insufficient to claim that the

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sample is truly representative of the population's mean. Regarding the method of obtaining the sold property data set, which is not an experiment, I will address that as Item #4 below.

From the 1999 IAAO text, **_Mass Appraisal of Real Property_** by Robert J. Gloudemans regarding parametric tests of horizontal equity on page 295 it is stated, "Parametric tests are available, but their validity is limited by the assumptions they make concerning the distribution of the data." There are distributional limitations when using the nonparametric Mann-Whitney test and there are distributional assumptions when using the parametric student t test. On page 300 of the same text a warning is issued regarding parametric tests, "The validity of these tests assume that the ratios from each property group being analyzed are normally distributed and have equal variance (the _Laverne test_ can be used to evaluate the equal variance assumption). Often these assumptions are not realistic."

Calculating a t statistic is a simple task. Inferring its significance is another matter. The calculated student t statistic is typically compared to a value from a t table. When the sample size is significantly large, the critical t value approximates the critical z value for a standard normal distribution. Therefore, the critical t value is similarly based on the parameters of a standard normal distribution. For smaller samples, the critical t value will differ from the critical z value. So to compare a calculated t value to the critical t (or z) value, one is relying on the presumption that the underlying data have a specific distributional form with specific parameters (variance, skew and kurtosis). That is why we call the t statistic a "parametric" statistic. Parametric statistics are statistics where the population is assumed to fit any parametrized distribution (most typically the normal distribution). To test a hypothesis, one compares a t value to the student t table, but they should not do so if the population parameters, from which the data used to calculate the student t are derived, are not typical of a "normal" data distribution. The calculated t value and the critical t value will be derived from different distributions and a direct comparison is not possible. Oftentimes, researchers will transform sample data from their original form to another form so that the transformed data are "normal". A common transformation is to use natural logs of actual data when the original data are skewed. This way, the researcher can properly use the t or z tables to test for statistical significance.

In addition to verifying that the population has a specific distribution to which t tests can be conducted, deciding on the proper t test is not a simple process. The type of student t test to conduct depends on the data[1]. The assessment data are not being compared to a hypothetical value—rather two groups are being to be compared to each other (testing for a difference in central tendency). The proper t test also cannot be the paired t test (sold and unsold samples are not the same size). So the proper test to conduct must be an unpaired t test. An unpaired t test does not require that the two groups' variances are the same, but it does require that the samples are drawn from normally distributed populations. If samples are repeatedly and randomly drawn from a population of data, then one can assume from the Central Limit Theorem, that the sampling distributions of the sample means will approximate the normal distribution and the student t test can be used. Without repeat sampling, one cannot invoke the Central Limit Theorem.

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[1] This material is substantially from Joy Ying Zhang's Carnegie Mellon University website, http://projectile.is.cs.cmu.edu/research/public/talks/t-test.htm.

Because a single sample of sold properties is not a sampling distribution of random draws from the population, prior to running a student t test one must test whether the data in each Township conforms to a normal distribution of data. A normality test, such as Shapiro-Wilk and/or Kolmogorov-Smirnov test can be employed to verify that the assessor's data in each township and/or neighborhood conforms to a normal distribution. If the data do not conform to a normal distribution, then the t test cannot be performed. Another way to look at this problem is simply this: If we can directly test if the data are normally distributed, why guess about the situation assume anything when all we need to do is test for normality?

Dr. Schwab quotes both the 1999 IAAO Standard on Ratio Studies and Dr. Hamilton's doctoral dissertation. There are a series of "conditional if" statements in the quotes he presents. Regarding the 1999 IAAO Standard, he even emphasizes the "conditional if" statements. In the 1999 Standard, "if the sample size is large enough (approximately thirty) and the sample is representative of the population, the distribution of sample means is approximately normally distributed regardless of the distribution of the individual ratios (Central Limit Theorem)."

Simply having a sample of at least thirty observations is insufficient to invoke the Central Limit Theorem. To use the Central Limit Theorem, the second condition, "and the sample is representative of the population", must also be true. If only one condition was necessary, then the word "and" which separates the two necessary conditions would be written "or". Therefore, the questions which must be answered prior to using an unpaired sample student t test are whether the data in each Township are normally distributed and whether the sample is representative of the population. Dr. Schwab states that, "(the t-test) assumes either that (1) the population is normally distributed, or (2) there are thirty or more observations per sample. In the latter case, the Central Limit Theorem asserts that the sample statistic (here the mean) will be normally distributed even if the population is not."

In general, the Central Limit Theorem states *if repeated samples are drawn from a population, as N (sample size) become larger, the sampling distribution of sampling means will approach normality with a mean of m and a standard deviation of s / √N; this theorem allows for inferences from samples to populations.* The key words here are "repeated samples are drawn from a population". Only after numerous repeated draws will the sample means reflect a normal population distribution. Each individual sample is not normal. Another view of the Central Limit Theorem is that "The Central Limit Theorem is a statement about the characteristics of the sampling distribution of means of random samples from a given population. That is, it describes the characteristics of the distribution of values we would obtain if we were able to draw an infinite number of random samples of a given size from a given population and we calculated the mean of each sample.[2]" Again, it is not correct to infer that a simple draw from the population will be normally distributed.

Another way to look at this situation is through experimental design regarding randomization for generalizing data to invoke the Central Limit Theorem. "Remember, sampling is an important tool for determining the characteristics of a population. We usually don't know the population's parameters (mean, standard deviation, etc.), but often want reliable estimates of them. Ensuring random (representative) sampling free of bias and sampling errors is important. Some sources of error can be accounted for in the experimental design (blind, double blind, latin square, etc.). An

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[2] From The Internet Glossary of Statistical Terms, http://www.animatedsoftware.com/statglos/sgcltheo.htm

important rule to remember is: No randomization, no generalization. What this means is, your results can not be generalized if proper randomization techniques did not occur in your sampling. Many masters degree students have visited their statistician AFTER collecting their data and discovered many months or years were wasted due to poor experimental design.[3]"

Regarding the magic number "thirty", Statistics Professor Dr. Jerry Dallal[4] of Tufts University states, "'Large' sample sizes can be as small as 30 per group if the two populations are roughly normally distributed. The more the populations depart from normality, the larger the sample size needed for the Central Limit Theorem to weave its magic, but we've seen examples to suggest that 100 observations per group is often quite sufficient.[5]" As can be seen from this source, a group with as much as 100 observations per random sampling draw might be needed before the t test can be properly conducted.

Additionally Dr. Dallal states, "For small and moderate sample sizes, the equal variances version of the test provides an exact test of the equality of the two population means. The validity of the test demands that the samples be drawn from normally distributed populations with equal (population) standard deviations. Just as one reflexively asks about randomization, blinding, and controls when evaluating a study design, it should become second-nature to ask about normality and equal variances when preparing to use Student's t test.[6]" As such, the underlying population parameters are crucial to know prior to using small samples in a t test.

Lastly, Dr. Dallal warns, "What should be done if the conditions for the validity of Student's t test are violated? The best approach is to transform the data to a scale in which the conditions are satisfied. This will almost always involve a logarithmic transformation. On rare occasions, a square root, inverse, or inverse square root might be used. For proportions, arcsin(sqrt(p)) or log(p/(1-p)) might be used. If no satisfactory transformation can be found, a nonparametric test such as the median test or the Wilcoxon-Mann-Whitney test might be used.[7]" What this means for anyone analyzing data, if the underlying assumptions of a test are violated, the test results are worthless.

From this material, it is obvious that to use a t statistic, the data must meet certain, strict requirements, not unlike that which is true for the Mann-Whitney U-test. The population must be normally distributed and the single sample of sold properties must be representative of the population. The good thing about assessment data is that we have the population of properties— every parcel of taxable residential property should be in the assessor's database. As such, we can use Shapiro-Wilk and/or Kolmogorov-Smirnov to verify that the population is normally distributed. We do not have to assume anything about the population's parameters, we do not have to repeat sample the data. Instead, we can calculate the parameters directly and directly check for normality in the population. To invoke the normality assumption from a single, non-randomly collected data set of a minimum size of thirty is not a valid statistical process.

[3] From Mathematics Professor Dr. Keith Calkin's website,
http://www.andrews.edu/~calkins/math/webtexts/prod13.htm
[4] Dr. Dallal is credited with fine-tuning the Lilliefors' Significance to the Kolmogorov-Smirnov test.
[5] From Tufts University Statistics Professor Dr. Jerry Dallal's website,
http://www.tufts.edu/~gdallal/STUDENT.HTM
[6] Ibid.
[7] Ibid.

Table 1
Sold and Unsold Property in LaPorte County Test for Normality: 2005 Appraised Values

Tests of Normality

	Twp Name	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	df	Sig.
05_06_Total	CASS	.061	572	.000	.966	572	.000
	CENTER	.127	8568	.000			
	CLINTON	.047	418	.025	.975	418	.000
	COOLSPRI	.068	4219	.000	.937	4219	.000
	DEWEY	.048	360	.046	.962	360	.000
	GALENA	.137	614	.000	.556	614	.000
	HANNA	.106	330	.000	.920	330	.000
	HUDSON	.069	981	.000	.952	981	.000
	JOHNSON	.117	39	.195	.906	39	.003
	KANKAKEE	.095	1252	.000	.945	1252	.000
	LINCOLN	.091	962	.000	.930	962	.000
	MICHIGAN	.229	10829	.000			
	NEW DURH	.051	1113	.000	.974	1113	.000
	NOBLE	.078	511	.000	.961	511	.000
	PLEASANT	.071	1110	.000	.889	1110	.000
	PRAIRIE	.100	32	.200[*]	.961	32	.289
	SCIPIO	.088	1384	.000	.932	1384	.000
	SPRINGFI	.046	1297	.000	.938	1297	.000
	UNION	.105	790	.000	.925	790	.000
	WASHINGT	.068	422	.000	.972	422	.000
	WILLS	.085	487	.000	.932	487	.000

a. Lilliefors Significance Correction

*. This is a lower bound of the true significance.

Table 2
Sold and Unsold Property in LaPorte County Test for Normality: 2006 Appraised Values

Tests of Normality

	Twp Name	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
06_07_Total	CASS	.056	572	.000	.964	572	.000
	CENTER	.129	8568	.000			
	CLINTON	.062	418	.001	.966	418	.000
	COOLSPRI	.075	4219	.000	.935	4219	.000
	DEWEY	.083	360	.000	.962	360	.000
	GALENA	.114	614	.000	.598	614	.000
	HANNA	.098	330	.000	.930	330	.000
	HUDSON	.057	981	.000	.956	981	.000
	JOHNSON	.117	39	.193	.914	39	.006
	KANKAKEE	.094	1252	.000	.933	1252	.000
	LINCOLN	.065	962	.000	.956	962	.000
	MICHIGAN	.253	10829	.000			
	NEW DURH	.042	1113	.000	.977	1113	.000
	NOBLE	.066	511	.000	.972	511	.000
	PLEASANT	.077	1110	.000	.885	1110	.000
	PRAIRIE	.117	32	.200*	.959	32	.266
	SCIPIO	.084	1384	.000	.934	1384	.000
	SPRINGFI	.141	1297	.000	.827	1297	.000
	UNION	.156	790	.000	.555	790	.000
	WASHINGT	.058	422	.002	.974	422	.000
	WILLS	.066	487	.000	.959	487	.000

a. Lilliefors Significance Correction

*. This is a lower bound of the true significance.

As can be seen in Tables 1 and 2 above, all townships' data, with the exception of Johnson and Prairie Townships, fail the normality test. Johnson fails both the Kolmogorov-Smirnov and the Shapiro-Wilk tests, and Prairie Township fails just the Kolmogorov-Smirnov test. Since the data are not normally distributed (with the exception of these two small Townships, to compare a student t test with critical t values (or z values since we know the population variance and standard deviation), is not a proper comparison.

Regarding my dissertation, the findings were that sold properties' sample characteristics were different from their equivalent population parameters. As such, I created a Mahalanobis Distance-based weighting technique to correct the sample so that it would be representative of the population. In doing so, I was able to improve the hedonic modeling process that could be employed by assessors. Because the sold property samples were not randomly drawn from the population of all properties and they typically had multivariate distributional differences when compared to the overall population of assessor data, I was able to improve the efficiency of traditional ordinary least squares (OLS) regression models, and my inverse-distance weighted estimators were the Minimum Variance Unbiased Estimators (MVUE) for the assessment data in my dissertation. OLS was found to not be MVUE because the estimators' variances were less efficient. In Dr. Schwab's Analysis, I see no reference to how he verifies that the sample is truly representative of the population or that he verified that the data are normally distributed so that his t test are valid indicators of any real difference in treatment.

Item #3: In a recent paper, Zimmerman[8] studies the effects of sample sizes and distributional shapes on Mann-Whitney test results. In that paper, he uses "extreme" differences in two groups as being in the ratio of 3 to 1. The analogy for a sales chasing study would be that there are only three times as many unsold properties as sold properties in a study. That will almost never happen and is probably closer to 10 to 1. In Zimmerman's "extreme" cases, the likelihood of making a Type I error are as high as 12-15% greater when the variance (shape) differs between groups and one group exceeds the other in number by a 3 to 1 ratio. In addition, as the variance increases between groups and the difference in the number of data points between groups increases, the Type I error probability increases. Dr. Zimmerman has extensively researched this issue and has published numerous papers discussing the limitations of nonparametric tests, including the proper use of Mann-Whitney.

Item #4: Dr. Schwab states that "A random variable is a real-valued function of the experimental outcome." What experiment takes place when I am given a sale of property? There were no controls in place, there were no means to properly design the data collection process to ensure a random process (such as invoking a random number generator to chose which house sells). Since I did not conduct an experiment to obtain the sold property observation (nor did I randomly select observations at random from the universe of sold properties—which could be considered an experiment), my statement that sold properties are not a "random variable" is correct. There is no experiment conducted, no random sampling conducted, so there is no random variable. Additionally, no where in appraisal theory is there reference to sales of property as random occurrences or events.

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[8] D.W. Zimmerman, 1996. Some Properties of Preliminary Tests of Equality of Variances in the Two-Sample Location Problem (1996). *Journal of General Psychology, 123*, 217-231.

Item #5: Dr. Schwab also states that "Two events are independent if the occurrence of one does not affect the occurrence or provide information about the occurrence of the other." I agree with this statement because statistical independence exists when the Probability of B given A is the Probability of B, or in statistics lingo,
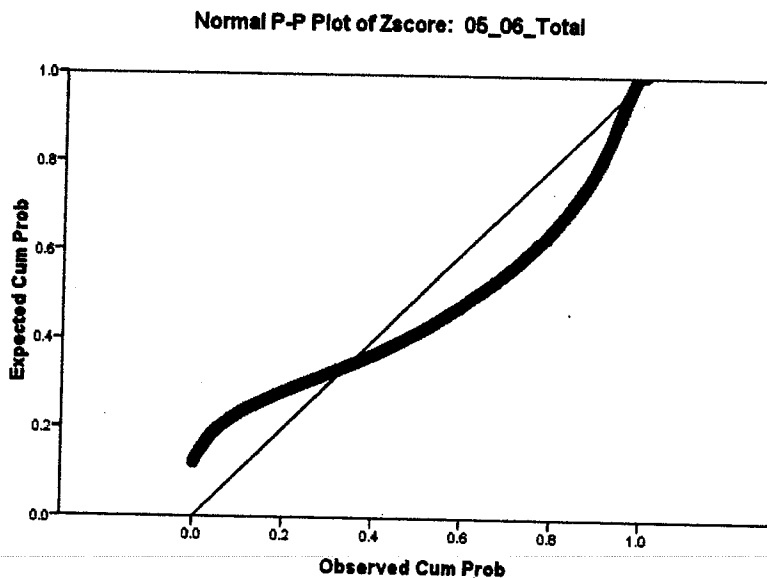
$$P(B|A) = P(B)$$

This is exactly what we get when a property sells (it didn't not sell). I did not intend to use the phrase "statistical independence". Rather, I was explaining that there is complete predictability to be in the unsold group if a property does not exist in the sold group (hence, the binary outcome reference).
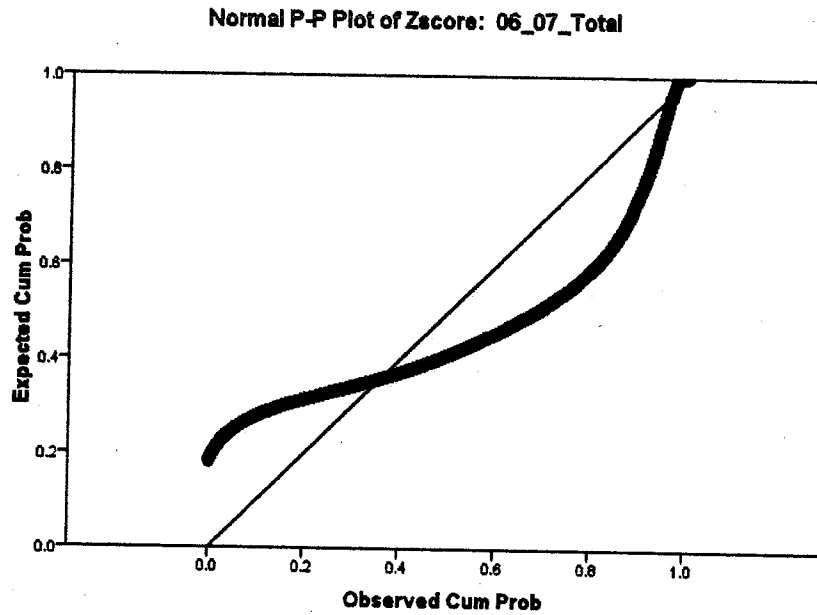
Graphs of Normal Probability Plots for LaPorte County

If the data are normally distributed, the P-P plots will follow a straight line (at a 45-degree angle). Any departure from this 45-degree line visually indicates the data are not normally distributed. As can be seen below, none of the data sets "fits" well with the 45-degree line because the data—sold, unsold, and all—are not normally distributed for either the 2005 or 2006 assessment years and parametric tests cannot be conducted on these data.
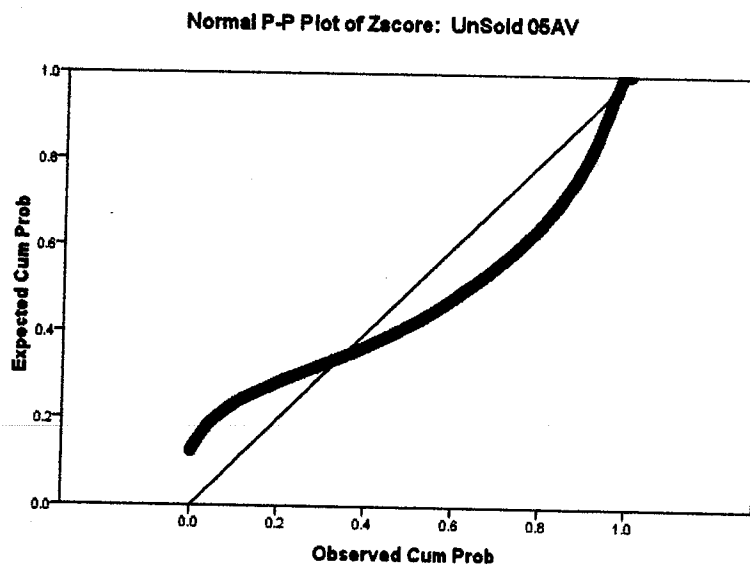
Graph 1:
LaPorte County: All Data, 2005 pay 2006

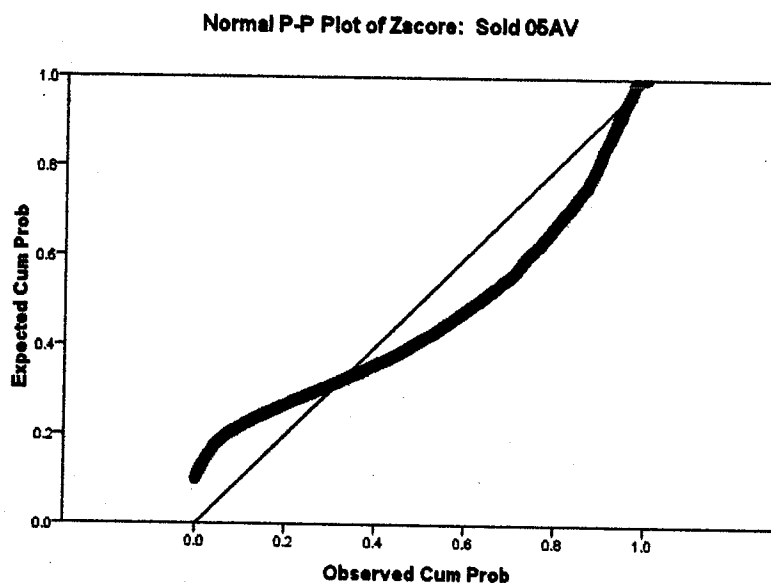Normal P-P Plot of Zscore: 05_06_Total

Graph 2:
LaPorte County: All Data, 2006 pay 2007

Normal P-P Plot of Zscore: 06_07_Total

Graph 3:
LaPorte County: Unsold Data, 2005 pay 2006

Normal P-P Plot of Zscore: UnSold 05AV

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Graph 4:
LaPorte County: Sold Data, 2005 pay 2006

Normal P-P Plot of Zscore: Sold 05AV

Graph 5:
LaPorte County: Unsold Data, 2006 pay 2007

Normal P-P Plot of Zscore: UnSold 06AV

10
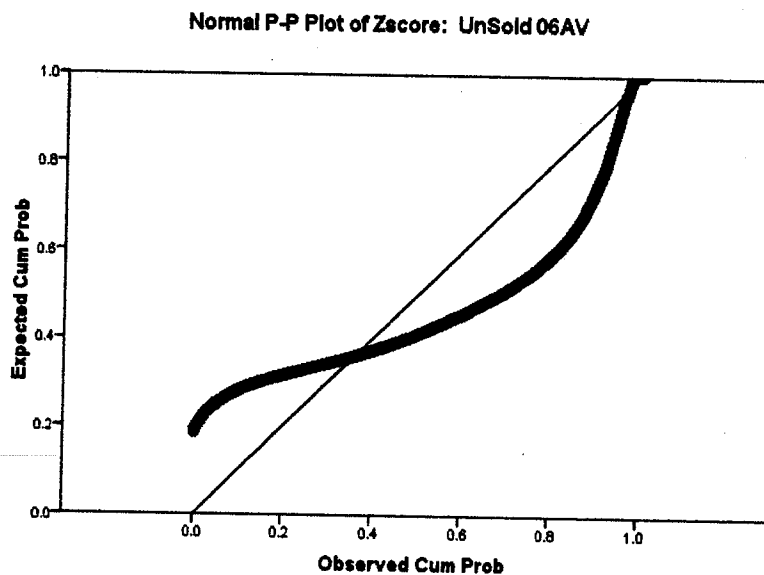
Graph 6:
LaPorte County: Sold Data, 2006 pay 2007

Normal P-P Plot of Zscore: Sold 06AV
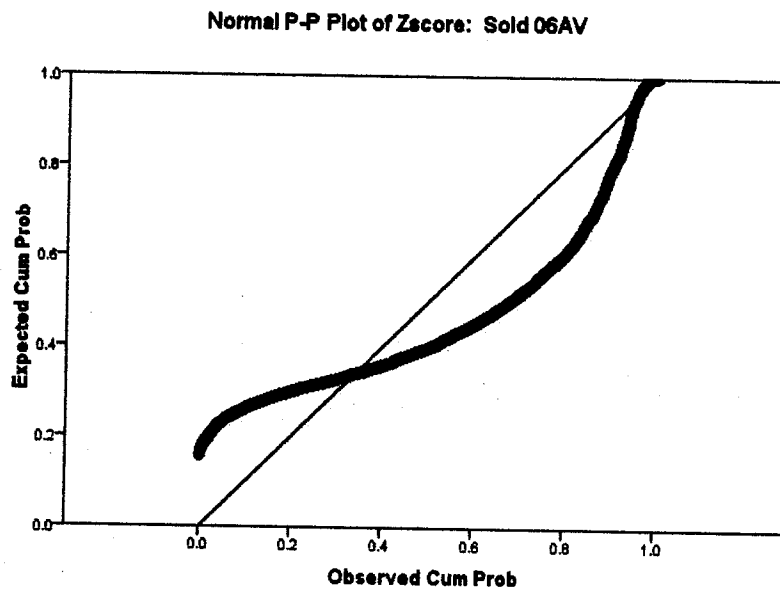
An Analysis of the April 10, 2008 DLGF Sales Chasing Study

In the first full paragraph on page 2 of 3 of the letter from Commissioner Cheryl A. W. Musgrave to Ms. Carol McDaniel, Mr. Shaw Friedman and Mr. Thomas Atherton dated April 10, 2008, it is stated, "The Department's Mann-Whitney test revealed the likelihood that sold and unsold improved residential parcels were not treated equally in nine (9) of the nineteen (19) tested townships in LaPorte County." The letter refers to the 1999 IAAO Standard on Ratio Studies (IAAO Standard) as the source for using Mann-Whitney as a means to determine if horizontal equity exists between groups and to "ensure that sold and unsold parcels are treated equally". Although the Department is abiding by the IAAO Standard on this matter to use the Mann-Whitney test, I am concerned that the Department does not fully comprehend the limits and the intended uses of the Mann-Whitney test.

Dr. David Schwab also wrote a memorandum supporting the April 10, 2008 letter from Commissioner Musgrave. In the third paragraph on page 2 of 6 in the Memorandum to LaPorte County Assessor, Shaw Friedman, and Thomas Atherton from David Schwab dated April 10, 2008, Dr. Schwab states (regarding the Mann-Whitney test), "It is a non-parametric test, meaning that it gives valid results regardless of the underlying distribution of data, and it is a comparatively low power test, meaning that it overlooks subtle differences which more sensitive tests might pick up on. It is certainly an appropriate test to use in this situation." Peer-reviewed statistical literature on this matter strongly and overwhelmingly disagrees with the statement that Mann-Whitney gives valid results "regardless of the underlying distribution of data". In the public hearing on May 15, 2008, Dr. Hamilton explained that distributional differences can cause Type I errors, and his written materials found in Binder 2 of Appendix B of the LaPorte County Assessor's Materials presented at the May 15 open public hearing support his statements on this matter opposing "regardless of the underlying distribution of data".

In the right circumstances, the Mann-Whitney test is undoubtedly an appropriate test to use to verify that two groups of data have differences between them. Those differences could be an indicator of horizontal inequity between sold and unsold parcels—differences in central tendency—provided that other dimensions in the data—shape dimensions—are similar. All that the results of a significant Mann-Whitney test tell us are that there are differences between two groups of data coming from the same population. Those differences can be from any one (or combination of) of the first four moments of a distribution of data which is explained next.

If a large enough sample of data is randomly chosen from a population, then the likelihood that the sample will have the same distributional characteristics as the population is very high. They should have the same variance, skew and kurtosis which—taken together—indicate they should have the same "distributional shape". The last item to test would be for central tendency (mean or median). This is exactly what we see in the Central Limit Theorem. Given the same distributional shape in the data, but different central tendencies of the data, yields a significant Mann-Whitney test for differences in typical treatment and a high likelihood of sales chasing.

It is at this point where the Department Study deviates from the intended use of the Mann-Whitney test. As stated above, a significant Mann-Whitney test indicates "differences" in data sets. Those differences can come from any one of the four moments in a dataset's distribution:

1. Central Tendency (zero, or difference between observed means)

2. Variance (or standard deviation)
3. Skew (long tails to the right or left)
4. Kurtosis ("fat" tails and "flat" peaks)

If we randomly select observations from a population, moments 1, 2, 3, and 4 should be statistically insignificant between the sample and the population. If we selectively choose observations from a population or they are given to us from a non-random selection process, then we do not know if any of the moments of the distributions are similar.

The Mann-Whitney test can detect any difference in any pairs of the four moments. So, if moments 1, 3, and 4 are similar between groups, but moment 2 (variance) is different, Mann-Whitney will yield a significant result, even though there is no difference in the levels of assessed values (the central tendencies—means or medians—of sold and unsold properties). You can repeat this process of choosing one, two or three moments in the distributions that are not similar (except for central tendency) to see that there are numerous potential outcomes for finding significant Mann-Whitney tests that have nothing to do with central tendency. As such, to use Mann-Whitney as a test for differences in central tendency, you must first verify that the data sets have the same distribution, or you could commit a Type I error. If sales data were truly random events, then one might forego the shape test, but since properties' sales data are not random, it is necessary to validate the shape test (variance, skew and kurtosis) of sold and unsold data prior to running Mann-Whitney.

Another issue with the Mann-Whitney test is that when the two groups being tested are significantly different in size, the Mann-Whitney test is exaggerated. That too could cause you to commit a Type I error. Therefore, to ensure that the Mann-Whitney test is properly conducted for "sales chasing", one must verify that the data sets have statistically similar variance, skewness and kurtosis. If one overlooks this first step, one can commit a Type I error and claim a difference in central tendency when that difference does not exist. The next step is to see how close (in number) two groups are to each other. The problem of two groups being significantly different in size (i.e., one group having very small numbers of observations) is that it is very difficult—if not impossible—to accurately test for differences in moments 2, 3, and 4 of a distribution, and the likelihood of committing a Type I error increases drastically.

Zimmerman[9] studies the effects of sample sizes and distributional shapes on Mann-Whitney test results. In that paper, he uses "extreme" differences in two groups as being in the ratio of 3 to 1. The analogy for a sales chasing study would be that there are only three times as many unsold properties as sold properties in a study. That will almost never happen and is probably closer to 10 to 1. In Zimmerman's "extreme" cases, the likelihood of making a Type I error are as high as 12-15% greater when the variance (shape) differs between groups and one group exceeds the other in number by a 3 to 1 ratio. In addition, as the variance increases between groups and the difference in the number of data points between groups increases, the Type I error probability increases. Zimmerman did not even model a situation where one group was 9 times as great as the smaller group because Mann-Whitney is not really intended for such great differences in group sizes.

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[9] D.W. Zimmerman, 1996. Some Properties of Preliminary Tests of Equality of Variances in the Two-Sample Location Problem (1996). *Journal of General Psychology, 123,* 217-231.

13

Statement on the Proper Use of Mann-Whitney U-tests

A Summary of Prerequisite and Necessary Data Conditions
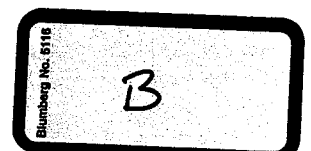## For Using Mann-Whitney U-tests in Sales Ratio Studies

Prepared For:

LaPorte County, Indiana, Assessor
Indiana Department of Local Government Finance
Nexus Group

Prepared by:

Thomas W. Hamilton, PhD, CRE, FRICS
University of St. Thomas-Minnesota
Opus College of Business
Shenehon Center for Real Estate

May 20, 2008

<u>Overview of this Statement on the Proper Use of Mann-Whitney U-tests</u>

Notwithstanding the comment by Dr. Schwab regarding Simpson's Paradox (which I will address later) on the matter of the Mann-Whitney U-test at the open public hearing on a pending/potential reassessment order in LaPorte County, Indiana, on the evening of May 15, 2008, I have prepared this statement to explain in detail why the Mann-Whitney test (a.k.a., the "Wilcoxon" test or the "Wilcoxon-Mann-Whitney" test) cannot be blindly and overtly applied to just any data. Based on literature published by IAAO and other reputable sources, it is apparent that a layman's understanding of nonparametric statistics might conclude that data are not subject to *any* distributional requirements. For the most part, nonparametric do not require a *specific* distribution, but some tests—including Mann-Whitney and Wilcoxon—do require that the data sets being compared to each other have a similar shape to their distribution to validate that the treatment between the two groups is similar. The treatment test variable is typically for central tendency, or simply the mean or median characteristic of the data. It is also known as the first moment of a data distribution.

What I stated on the evening of May 15th is that for a sales chasing argument to be statistically significant using the Mann-Whitney test, sold and unsold data must have the same distributional shape. This is the requisite first step in any Mann-Whitney test. *If* one determines the sold and unsold data sets do have the same distributional characteristics (i.e., shape), *and if* the Mann-Whitney statistic is significant, *then* one could argue that sales chasing has occurred. This two step procedure *is required* because the Mann-Whitney U-test will reject the null hypothesis that treatment is the same between two groups (sold and unsold properties have been assessed similarly) *if any* of the following conditions are true: 1) the means of the two groups are different; 2) the variances of the two groups are different; or 3) the skewness or kurtosis of the two groups are different.

If the variance, skewness and kurtosis are similar (which would indicate that the data sets have "similar shapes"), then a difference between sold and unsold properties' measures of central tendency—as shown through a significant U-test from Mann-Whitney—can be reasonably assumed to be caused by a treatment difference between the two groups. In layman's terms, there is a reasonable potential that sales chasing *might* have occurred. If the shapes of the data are not "similar", then the U-test could be significant because of skewness, kurtosis, or variance differences in the data, not just the central tendency measure (mean or median) of treatment between the groups.

Without first checking the underlying data distributions, one's Mann-Whitney test could yield a false positive significance (this is what is known as a Type I error). In other words, sales chasing cannot be determined to exist in the groups. The Mann-Whitney test statistic would be significant due to distributional issues (variance, skewness and/or kurtosis) and not necessarily due to central tendency issues. Also, one might improperly conclude that sales chasing has occurred when the real source of the significant U-test is unrelated to sales chasing.

Regarding Simpson's Paradox

Someone might claim that my "choices" of which properties are included in the sold group is a lurking, or confounding variable that is causing the spurious results in the Mann-Whitney U-tests. Even if we assume that to be the case, there is no way to aggregate the sold and unsold data into a single group

and construct a Mann-Whitney test on a single group. Since there is no aggregate baseline from which to compare the "disaggregated" Mann-Whiney tests, there is no way to show the paradox.

Sales Chasing Studies

Another issue in sales ratio studies regarding the proper use of the WMW U-test is that the number of items in each of the two samples (sold and unsold properties) be approximately the same size. This does not mean that each group must be of exactly equal size, but the two groups must be fairly similar in count to accurately depict differences in the two groups. As the size of two samples in a WMW U-test become less similar, their distributions become less similar, and the likelihood of making a Type I error increases. In plain English, the U-test indicates that two samples are treated differently when in fact the two samples are treated similarly. For a detailed discussion on the proper use of a Mann-Whitney test, please see Zimmerman (1996)[1], Marascuilo and Serrlin (1988)[2], Maxwell and Delaney (1990)[3], and Zimmerman and Zumbo (1993)[4].

Yet another issue that must be addressed regards randomness. Mann-Whitney tests typically assume that the data in the two groups are random events or variables. Sales of property are not considered random events because the unsold properties are a simply a function of the sold properties. Either a particular property sells or it doesn't—which is a binary outcome—and the sold and unsold properties are therefore dependent on each other (predictable and not random).

As I stated in the open public hearing on May 15, 2008, I do not agree with the findings of the Denne report. Additionally, now that I have looked at the April 10th memorandum from Dr. Schwab regarding horizontal equity between sold and unsold parcels in LaPorte County, I can say that I do not support his contention that sales chasing exists in the LaPorte County property assessments that would warrant a reassessment of property in the county. The statement by Dr. Schwab on page 2 of 6 of his memorandum referring to the Mann-Whitney test, "It is a non-parametric test, meaning that it gives valid results regardless of the underlying distribution of data", is simply wrong. Extensive peer-reviewed literature has been written on this matter, and that literature overwhelmingly states that Mann-Whitney tests for more than simply differences in central tendency, and that similar data distributional shapes are needed to test for differences in central tendency between two groups.

Dr. Schwab's test results for sales chasing fail to follow the proper two-stage procedure needed to ensure that a Type I error is not made. Because Dr. Schwab did not conduct the proper, prior analysis of data distributional similarity between sold and unsold property groups, his conclusions on the matter are also invalid.

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[1] D.W. Zimmerman. Some Properties of Preliminary Tests of Equality of Variances in the Two-Sample Location Problem. *Journal of General Psychology*, 1996, 123(3), pp. 217-231.
[2] L.A. Marascuilo and R.C. Serlin. *Statistical Methods for the Social and Behavioral Sciences*, New York: Freeman, 1988.
[3] S.E. Maxwell and H.D. Delaney. *Designing Experiments and Analyzing Data: A Model Comparison Perspective*, Belmont, CA: Wadsworth, 1990.
[4] D.W. Zimmerman and B.D. Zumbo. *Rank Transformations and the Power of the student t test and the Welch's t` test for Non-normal Populations with Unequal Variances*. Canadian Journal of Experimental Psychology, 1993, 47, pp. 523-39.

APPENDIX A

Summary of Pertinent Issues Regarding the Denne and DLGF Reports on LaPorte County

Distributions of 2005 (value year 1999) and 2006 (value year 2005) appraised values, by Township and by County, do not have the same variance, skewness, and kurtosis (i.e., distributional shape) for the sold and unsold groupings of properties for the vase majority of property in LaPorte County. As such, the two groups of sold and unsold property cannot be compared using the Mann-Whitney U-test as performed in the Denne Study due to the distributional dependencies required by the Mann-Whitney U-test.

Another issue about differences in appraised values is raised by Dr. Schwab in his Memorandum to the LaPorte County Assessor, Mr. Friedman, and Mr. Atherton dated April 10, 2008. On page 2 of 6 of that Memorandum Dr. Schwab refers to changes in assessed values between 2005 and 2006. It is my understanding that property was assessed in 1999 and in 2005. Between 1999 and 2005, properties were not reassessed, but rather assessed values were "time-trended" on a series of indices (time, neighborhood, grade, condition, etc.). As such, the underlying distributions of property values will be significantly different between the 2005 values (based on trended assessments from 1999) and new values that appear on the 2006 statements. To state that "Large differences within a township indicate that sold and unsold parcels may have been assessed differently" is a guess at market conditions over the past 6 years. Certain types of properties are more desirable and marketable than others and their market value estimates will change at different rates over time. If those property types which are actively transacting happen to sell, then one would expect a positive change in value relative to less desirable properties. An example over this time period would be lakefront and condo/townhouse properties. Those two groups had significantly higher appreciation rates than did inner-city properties. They also had significantly higher transaction rates. Therefore, these two groups of properties—that are selling at higher rates and for higher prices each year—should experience higher assessed value changes (if the assessor is to value them in their current use and at current market value). If the assessor did NOT value these more desirable properties at their current use value, then the assessor would not be conducting her duties in accordance with statute. To simply show that there are differences in sold properties' and unsold properties' and say that is indicative of "sales chasing" shows a lack of understanding property price markets and their inherent dynamics.

Explicit necessary conditions regarding the Mann-Whitney test must be met before using the statistic to test for differences. Two sources support this claim. First, "The Mann-Whitney test requires independent samples from populations with equal variances, but the populations need not be normal." (*Applied Statistics in Business and Economics*, David P. Doane and Lori E. Seward, McGraw-Hill Higher Education, ISBN: 13:978-0-07-296696-1, page 706). Second, "(The Mann-Whitney U-test is a) nonparametric test for detecting differences between two location parameters based on the analysis of two independent samples (from a single population) (*Pocket Dictionary of Statistics*, Hardeo Sahai and Anwer Khurshid, Hill Higher Education, ISBN: 0-07-251693-3).

These two sources state that samples from the two groups tested require equal variances and the groups must be independent samples from a single population, where that single population has only one distributional shape (its own). We also know that sold and unsold properties are not independent data because one condition (sold) precludes the other condition (unsold). Comparisons of skewness and

kurtosis of Township data show that the sold and unsold data in LaPorte County do differ in distributional shape and therefore cannot be compared using Mann-Whitney.

Several peer-reviewed and authoritative articles and other works explain the proper use and limits of tests of uniformity for the Mann-Whitney U-test are summarized here. In "Invalidation of Parametric and Nonparametric Statistical Tests by Concurrent Violation of Two Assumptions. *Journal of Experimental Education, 67, 55-68, 1998*, Zimmerman states that, "To provide counterexamples to some commonly held generalizations about the benefits of nonparametric tests, the author concurrently violated in a simulation study two assumptions of parametric statistical significance tests—normality and homogeneity of variance. For various combinations of non-normal distribution shapes and degrees of variance heterogeneity, the Type I error probability of a nonparametric rank test, the Wilcoxon-Mann-Whitney test, was found to be biased to a far greater extent than that of its parametric counterpart, the Student *t* test." Here the author explains that when the data used in a Mann-Whitney test have different shapes and heteroskedasticity, Type I errors are possible.

In "Some Properties of Preliminary Tests of Equality of Variances in the Two-Sample Location Problem (1996). *Journal of General Psychology, 123*, 217-231, 1996, Zimmerman states that, "A simulation study was conducted to examine probabilities of Type I errors of the two-sample Student *t* test, the Wilcoxon-Mann-Whitney test, and the Welch separate-variances *t* test under violation of homogeneity of variance. Two-stage procedures in which the choice of a significance test in the second stage is determined by the outcome of a preliminary test of equality of variances in the first stage were also examined. Type I error rates of both the *t* test and the Wilcoxon test were severely biased by unequal population variances combined with unequal sample sizes." Again, homoskedasticity and similar shapes are needed to properly conduct a Mann-Whitney test.

In "A Warning about the Large-Sample Wilcoxon-Mann-Whitney Test. *Understanding Statistics, 2*, 267-280, 2003, Zimmerman states that, "It is known that the Wilcoxon-Mann-Whitney test is strongly influenced by unequal variances of treatment groups combined with unequal sample sizes." Zimmerman starts this paper with the phrase, "It is known" to describe problems of unequal variances and sample size differences when using Mann-Whitney.

In "Two Separate Effects of Variance Heterogeneity on the Validity and Power of Significance Tests of Location, *Statistical Methodology, 3*, 341-394, 2006, Zimmerman states that, "Heterogeneity of variances of treatment groups influences the validity and power of significance tests of location in two distinct ways. First, if sample sizes are unequal, the Type I error rate and power are depressed if a larger variance is associated with a larger sample size, and elevated if a larger variance is associated with a smaller sample size. This well-established effect, which occurs in *t* and *F* tests, and to a lesser degree in nonparametric rank tests, results from unequal contributions of pooled estimates of error variance in the computation of test statistics. It is observed in samples from normal distributions, as well as non-normal distributions of various shapes. Second, transformation of scores from skewed distributions with unequal variances to ranks produces differences in the means of the ranks assigned to the respective groups, even if the means of the initial groups are equal, and a subsequent inflation of Type I error rates and power." Zimmerman also states, "Because of interaction of these separate effects, the validity and power of both parametric and nonparametric tests performed on samples of any size from unknown distributions with possibly unequal variances can be distorted in unpredictable

ways." It is imperative that sample sizes are similar, and the data distributions are of similar shape to properly conduct Mann-Whitney tests.

Professor G. David Garson of North Carolina State University states in his course outline for Quantitative Research in Public Administration[5] in the section titled, "Tests for Two Independent Samples: Mann-Whitney U, Wald-Wolfowitz Runs, Kolmogorov-Smirnov Z, & Moses Extreme Reactions Tests", the assumptions for all non-parametric tests include:

1. Random sampling is assumed, as in all significance tests.
2. Independent samples are assumed. The two samples should not be correlated (ex., not before-after studies, panel studies, or matched-pairs studies).
3. Data distribution. The tests in this section are non-parametric, not assuming the normal distribution. The Mann-Whitney U test, but not the Wald-Wolfowitz or Kolmogorov-Smirnov tests, also assumes that the distribution in each sample is similar in shape. If the researcher can assume a normal distribution, t-tests are preferable since they can detect true differences between groups using a lower sample size than nonparametric tests in this section. Put another way, t-tests have greater power. Use independent, random samples. The Mann-Whitney U test requires that the two tested samples be similar in shape.
4. Data level. All the tests in this section assume ordinal data or higher.
5. Data pairs. When the proportion of pairs which are tied is high, none of the tests in this section should be used.
6. Sample size. For the Mann-Whitney, Wald-Wolfowitz, and Kolmogorov-Smirnov tests, sample size must be the same in the two samples so that each has the same range of rank values, from 1 to n. Small deviations from this requirement usually do not affect substantive conclusions. Populations, of course, need not be of equal size.

What Professor Garson is saying in terms of a sales chasing study is that:
1. Property sales are not a random event and their sampling representation of a population's true parameters cannot be assumed.
2. Properties in a Sales Chasing study are not independent: a property sells (1) or it does not sell (o)—this is a binary, conditional relationship and creates a dependency between the two samples.
3. Non-parametric does not mean "distribution free". Twice Professor Garson emphasizes that the two samples be "similar in shape". This can be done by looking at the data's variance, skewness and kurtosis. If two distributions have similar shapes (their variance, skewness and kurtosis are similar) then, and only then, can Mann-Whitney be used as a proper test statistic. If sales were truly a random event, then the variance, skewness and kurtosis of the two samples would most likely be similar.
4. Rarely would it be the case where half (or even nearly half) of the data in any jurisdiction would sell in any given year. To claim that a county's assessment data for a given year is a "Population" is a weak claim in that it is a single year's data in a stream of years' data sets, and market forces for real estate transactions extend beyond the bounds of any one county to adjoining counties. Therefore, the sample sizes of sold and unsold should be similar. This is simply not the case in any Property Class, Neighborhood, Township or grouping thereof.

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[5] From: http://www2.chass.ncsu.edu/garson/pa765/mann.htm

Random Sampling and Size Differences in the WMW Test: A Case of Simpson's Paradox?

Below are the four examples which I explained in the open public hearing in LaPorte County, Indiana, on May 15, 2008. I have replicated them here for convenience. At one point in the hearing, Dr. Schwab brought up Simpson's Paradox. At the time, I was not sure exactly why he did, but I can only assume he did because he was trying to infer that the examples I referred to contained spurious results and were simply examples of Simpson's Paradox (a problem of aggregating data where the aggregate outcome gives results different from the disaggregated equivalent outcomes). I will briefly explain Simpson's Paradox and then show how the results of my four examples are not examples of Simpson's Paradox. I do contend, however, that a very good example of Simpson's Paradox is found in Mr. Denne's time-trended adjusted sales prices (an aggregated outcome). The results of over-aggregation created problems in LaPorte County with respect to the median A/S ratios, confidence intervals around those ratios, CODs and PRDs.

Simpson's Paradox

Simpson's paradox is the statistical paradox where the successful test of groups is reversed when the groups are combined. In the marketplace for real estate, the observed action of properties selling is neither a combinatory function, nor is it causally determined—properties sell because a buyer and seller agree to a set of conditions pursuant to a mutually agreeable set of circumstances amenable to both parties and only after the seller decides to market her property. This process is neither a random event nor is it completely predictable. In the case of testing for similarity between sold and unsold property groups appraised values, one certainty that we can state is true is that being a "sold" property precludes that property from being "unsold".

Simpson's Paradox requires a systematic disaggregation of an aggregate set of data. Disaggregation occurs because the researcher discovers a confounding or "lurking" variable that allows a meaningful separation into sub-groups. Sales of property are non-random facts of the marketplace, and the outcome creates two groups of properties—sold and unsold. This fact is neither "lurking" nor confounding, it is apparent and known. There are also no lurking variables causing properties to sell.

In the examples below, all of the appraisals are considered excellent which means there is no sale chasing present in the data. Someone might claim that my "choices" of which properties are included in the sold group is a lurking, or confounding variable that is causing the spurious results in the Mann-Whitney U-tests. Even if we assume that to be the case, there is no way to re-aggregate the data into a single group and construct a Mann-Whitney test on that single group. The Mann-Whitney test requires two groups to calculate the U-statistic, and a single, aggregative data set is required for the Simpson's Paradox comparison. Since there is no aggregate baseline from which to compare the Mann-Whiney tests, there is no Simpson's Paradox to be found.

The purpose of the examples below is to show that it is the distributions of the sold and unsold properties, when substantially different, that gives us conflicting results that are not due to sales chasing, but rather it is the differences in data distributions. The examples support the literature I cited

earlier which claim that the Mann-Whitney U-test will find differences in more than just the mean or median of a distribution, and that is why the sold and unsold data must have similar shapes.

EXAMPLE 1

In this example, I assume that 1001 properties exist in a "Township". The properties range in appraised value from $50,000 to $150,000 in $100 increments and those appraisals are perfect representations of the marketplace. In other words, the data are perfect. I also assume in this first example that 101 properties sell (roughly 10%). They also happen to be the first 101 data (the 101 lowest valued properties). The results for the WMW test are shown below:

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Appraised Value	1001	100000.00	28910.811	50000	150000
Sold100	1001	.10	.301	0	1

Mann-Whitney Test

Ranks

	Sold100	N	Mean Rank	Sum of Ranks
Appraised Value	0	900	551.50	496350.00
	1	101	51.00	5151.00
	Total	1001		

Test Statistics[a]

	Appraised Value
Mann-Whitney U	.000
Wilcoxon W	5151.000
Z	-16.497
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: Sold100

According to this Mann-Whitney test, "sales chasing" has occurred, even though in the construction of the example the data are "perfectly appraised" and no sales chasing exists.

EXAMPLE 2

In this example, the 100 properties which sell alternate (first, eleventh, twenty-first, thirty-first, etc. in ascending value) through the final property in the "Township". Again all the appraised values are correct, and in this example, the WMW test says there is no evidence of sales chasing.

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Appraised Value	1001	100000.00	28910.811	50000	150000
Sold 100 Alternate	1001	.10	.300	0	1

Mann-Whitney Test

Ranks

	Sold 100 Alternate	N	Mean Rank	Sum of Ranks
Appraised Value	0	901	500.56	451001.00
	1	100	505.00	50500.00
	Total	1001		

Test Statistics[a]

	Appraised Value
Mann-Whitney U	44650.000
Wilcoxon W	451001.000
Z	-.146
Asymp. Sig. (2-tailed)	.884

a. Grouping Variable: Sold 100 Alternate

This example of a small data set selling in a non-random manner causes us to question why if all the properties are properly valued that in one case "sales chasing" exists (Example 1) and in the other case "sales chasing" does not exist (Example 2)? The answer is not in the construction of the nonparametric statistic, but rather the fact that a non-random event caused the results. Sales of property are not random events and the distributions of the sold properties in the first case differ substantially from the distribution of the sold properties in the second case.

EXAMPLE 3

In this example, 501 properties sell (approximately 50%), but it is the first 501 which sell. The final 500 properties do not sell. The results from the Mann-Whitney test would indicate that "sales chasing" has occurred.

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Appraised Value	1001	100000.00	28910.811	50000	150000
Sold500	1001	.50	.500	0	1

Mann-Whitney Test

Ranks

	Sold500	N	Mean Rank	Sum of Ranks
Appraised Value	0	500	751.50	375750.00
	1	501	251.00	125751.00
	Total	1001		

Test Statistics[a]

	Appraised Value
Mann-Whitney U	.000
Wilcoxon W	125751.000
Z	-27.386
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: Sold500

The Z-statistic is very large in this case. Sales chasing must have occurred even though the data are constructed as "perfect".

EXAMPLE 4

In this example, the 501 properties which sell alternate (first, third, fifth, seventh, etc.) through the final property in the "Township". Again all the appraised values are correct, and in this example, the WMW test says there is no evidence of sales chasing.

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Appraised Value	1001	100000.00	28910.811	50000	150000
Sold 500Alternate	1001	.50	.500	0	1

Mann-Whitney Test

Ranks

	Sold 500Alternate	N	Mean Rank	Sum of Ranks
Appraised Value	0	501	501.00	251001.00
	1	500	501.00	250500.00
	Total	1001		

Test Statistics[a]

	Appraised Value
Mann-Whitney U	125250.000
Wilcoxon W	251001.000
Z	.000
Asymp. Sig. (2-tailed)	1.000

a. Grouping Variable: Sold 500Alternate

As we can see here, an equal-sized data set (approximately 50% sell and 50% don't) with properties selling in a non-random manner causes us to question why if all the properties are properly valued that in once case "sales chasing" exists (Example 3) and in the other case "sales chasing" does not exist (Example 4)? Again, the answer is not in the construction of the nonparametric statistic, but rather the fact that a non-random event caused the results. Again, sales of property are not random events and the distributions of the sold properties in the first case differ substantially from the distribution of the sold properties in the second case. This is why we must first be certain that the distributions of the data are sufficiently similar before conducting the Mann-Whitney test.

DLGF decision may come next week

■ Reassessment for county topic of meeting; most speak in favor.

By JASON MILLER
The News-Dispatch

LA PORTE — The Indiana Department of Local Government Finance commissioner told The News-Dispatch she hopes to know Thursday if the board will issue a second reassessment for the county.

After a nearly three-hour hearing at the La Porte County Complex, Cheryl Musgrave said DLGF have about a week's worth of discussion ahead of them.

"Depending on what comes up, it might be Friday morning," she said. "But the way it looks now, I think we'll have a decision by some time on Thursday."

During the meeting, a majority of speakers voiced opinions in favor of a reassessment.

The DLGF's decision will likely exacerbate issues between the county

DLGF

CONTINUED from Page A1

and the department, which County Attorney Shaw Friedman said a new reassessment would cost $2 million and, in response, looked over the county's contract with Nexus again.

The study, Musgrave — the DLGF said the county's contract with Nexus was not legal.

According to Friedman, the county can't afford to go through another reassessment as the state would force the county to pay for any new reassessment.

Friedman argued Thursday the DLGF hoodwinked the county by not telling them until Thursday morning it planned to argue the valid-ity of the contract.

newspaper quote in which times that Musgrave and the DLGF recuse them-selves from the proceedings because they've treated the county unfairly.

"I think we had some strong testimony that the study they used wasn't valid," Friedman said, after Tom Hamilton, an assessment expert, testi-fied the DLGF's reference study was not valid. "At no time prior to tonight was this listed as a reason for this hearing. We have a court decision stating that contract is valid."

A state court last year affirmed the contract.

Musgrave said she wouldn't recuse herself

He demanded several from the proceedings and said her group would take into consideration every-thing they'd heard Thursday, including what she called an "overwhelm-ing majority" of people in favor of reassessment.

Musgrave kept a run-ning tally of speakers' opin-ions and said of 27 total speakers, 20 people and one elected official approved of a reassessment while three elected officials and two citizens opposed it.

One man asked Musgrave to fix a problem with water in his ditch.

□

Contact reporter Jason Miller at jmiller@thenews-dispatch.com.

Section

South Bend
Tribune

Friday
May 16,
2008

Local

▶ INSIDE
Spirits high as Buchanan 6-year-old
battles disease. B3

▶ In SATURDAY'S TRIBUNE
State finds families without license branch

Voice of the People ... B4 · Michiana Point of View ... B5

Accusations abound at hearing

■ State to determine
if LaPorte County
should redo 2006
reassessments.

By NANCY J. SULOK
Tribune Staff Writer

LAPORTE — County Attorney Shaw Friedman accused state officials of springing some unexpected evidence on him Thursday night during a hearing on whether the county's reassessment should be redone for 2006 property taxes, payable in 2007.

Cheryl Musgrave, commissioner of the Indiana Department of Local Government Finance, accused Friedman of springing a surprise expert witness on the board.

It was the latest round in a fight that's been going on for at least six months over whether major mistakes were made in property reassessments. If the DLGF concludes that the process was flawed, it could order the county, probably at great expense, to throw out last year's assessments and start the process over for all or parts of LaPorte County.

That could be done despite the fact that the DLGF earlier had approved the county's assessments, and the county, in fact, had billed residents for property taxes based on those approved assessments.

Before testimony began, Friedman objected to a PowerPoint presentation that included a line about LaPorte County's contract with the Nexus Group being in violation of state law. LaPorte County hired the Nexus Group to handle reassessments in the county.

The validity of the contract had not been brought up before, Friedman said. Furthermore, he added, Nexus President Frank Kelly, the DLGF had approved the contract in 2004.

Tom Atherton, an Indianapolis attorney, outlined the assessment problems on behalf of his client, Michigan City businessman William Wendt. Wendt had commissioned a company to do an independent assessment, and it concluded that the Nexus methodology and results were flawed.

Atherton said the county's official assessment was so wrong that the county assessor, Carol McDaniel, should be removed from office. He said the Property Tax Assessment Board of Appeals, which hears property tax appeals, also is deficient.

During his response, Friedman repeatedly said that Musgrave had shown herself to be prejudiced in favor of the other side, and he demanded she should recuse herself from the hearing process.

The county's surprise witness was Thomas W. Hamilton, who teaches real estate at the University of St. Thomas in Minneapolis.

At McDaniel's request, Hamilton said, he did a study of the work done by consultant Robert C. Denne, who had been hired by Wendt to examine the county's assessments. Hamilton concluded that the methodology used by Denne was wrong, so "it is impossible for his conclusions to be considered valid."

Following the verbal dueling and accusations of wrongdoing by both sides, Musgrave opened up the hearing to public comment.

Of the 27 who spoke, only a few spoke against having a reassessment done. The majority urged the DLGF to order a reassessment of the entire county.

Most of those who spoke said the assessed value of their properties had risen illogically. Efforts to appeal through the PTABOA has been a slow process, with many property owners saying they still are waiting for a hearing.

Some expressed fear that they or their neighbors can no longer afford to keep their homes.

Musgrave said she will continue to take written testimony until Wednesday and would make a decision some time after that.

Friedman has pledged to sue if the state orders a reassessment.

Briefs

INDIANAPOLIS

Appeals court affirms
sentences for Finley

The Indiana Court of Appeals on Thursday affirmed the sentences of Jeffrey Finley, who is serving 55 years in prison for the murder of South Bend Cpl. Scott Severns and 10 years for attempted robbery.

Finley had appealed his sentences on the grounds that his age, lack of criminal record and expression of remorse did not receive due weight as mitigating factors. He also argued that his sentences should have been imposed concurrently.

But the court, in a decision posted on the Indiana Court of Appeals Web site, found the sentences appropriate.

Finley was sentenced Sept. 26 in St. Joseph Superior Court.

SOUTH BEND

CITY DOWNS MARQUETTE IN TENNIS SECTIONAL

See Sports, B1

ONLINEPOLL

VOTE: Do you support or oppose same-sex marriage? Vote at www.thenewsdispatch.com.

RESULTS: Of respondents, 23 percent believe a reassessment of 2006 is needed for the county of La Porte while 77 percent don't believe one is needed

STATE OF INDIANA   IN LAPORTE SUPERIOR COURT NO. 2

COUNTY OF LAPORTE   MICHIGAN CITY, INDIANA

MICHAEL CONNOR, LINDA O'MAHONEY,
DONALD LAYELLE, JOHN T. MCKITRICK,
JOHN WILSON, JUDY CURITS, WILLIAM
WOZNEY, BRIGID MCKITRICK, MARY JANE
FERNANDEZ, KATHERINE BRENNAN,
BETTY FLYNN, HOWARD A. MASON,
SHARON STITCH, DAVID KAPLAW,
SUELLEN KELLEY-BERGERSON, JEROME
SLOMKA, JUDITH WOLFORD, MOLLIE
MCKITRICK, JOHN P. CONNOLLY, KAREN
V. RAFTER, JAMES KENSIK, KATHERINE A.
KELLEY, RITA FINK, JERRY MUCH,
THOMAS MARREN, JOSEPH WAICKUS,
GEORGE HENDAY, and TOM STROPKY,
NAMED PLAINTIFFS, taxpayers and residents
of LaPorte County, on behalf of themselves and
others similarly situated,
And MICHIGAN TOWNSHIP CITIZENS
FOR FAIR TAXES, INC. (an Indiana Not
For Profit Corporation),
                        Plaintiffs,


        v.   Cause No. 46D02-0709-PL-129

CAROL MCDANIEL, individually and as
Assessor of LaPorte County, Indiana,
NEXUS GROUP, INCORPORATED, FRANK S.
KELLY, and JEFFREY WUENSCH,
                        Defendants.

JUDGMENT FOR DEFENDANTS

This cause of action came before the court for hearing on the separate Motions to

Dismiss filed by Defendant Carol McDaniel and Defendants Nexus Group, Frank Kelly,

and Jeffrey S. Wuensch, filed November 13 and 14, 2007, respectively, as well as the

related Motion to Strike by Defendants Nexus Group, Frank Kelly, and Jeffrey S.

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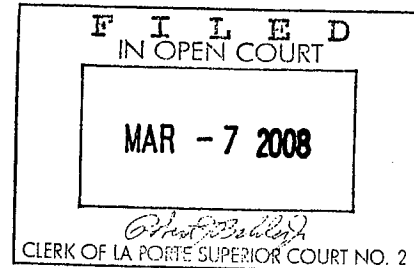
Wuensch on January 17, 2008, and the court having heard the arguments concerning the respective motions, having read and considered the pleadings in support of and in opposition to the motions, having had these matters under advisement and being duly advised in the premises, now issues and files its findings and conclusions of law:

1. This court has subject matter jurisdiction over that general class of proceedings to which this cause of action belongs.

2. Hearing was held the 17th day of January, 2008. Plaintiffs appeared by Counsel Bradley Adamsky, only. Defendant Carol McDaniel appeared in person and by counsel, Shaw Friedman. Defendants Nexus Group, Incorporated, Frank S. Kelly and Jeffrey S. Wuensch appeared by Counsel Carl J. Becker only.

MOTION TO STRIKE

3. The Motion to Strike filed by Defendants Nexus Group, Inc., Frank S. Kelly, and Jeffrey S. Wuensch was not filed within the twenty (20) day period provided by Trial Rule 12(F); accordingly, the Motion to Strike should be, and it is hereby, denied.

4. The oral motion of Defendant Nexus Group, Inc., Frank S. Kelly, and Jeffrey Wuensch raised in open court that if the Motion to Strike be denied, those defendants should be granted additional time to designate evidence, is also denied.

CONVERSION TO T.R. 56

5. Given the denial of the motion to strike the Exhibits attached to plaintiffs response to defendants Nexus Group, Frank S. Kelly, and Jeffrey Wuensch, as well as the fact that Defendant McDaniel has attached an affidavit of Robert Szilagyi and an "Official Opinion" of the Indiana Attorney General to her "Reply" to plaintiffs' response

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to her motion to dismiss, both motions to dismiss shall be treated as motions for summary judgment and adjudicated accordingly.

6. There is no genuine issue of material fact regarding the following outcome-dispositive matters.

7. Defendants are entitled to judgment as a matter of law for the following reasons:

a) plaintiffs may not utilize a declaratory judgment action to obtain the remedy of a declaration by this court "that all services provided by Nexus under Exhibit A [the Professional Services Agreement: Draft signed by LaPorte County's Board of Commissioners and Frank S. Kelly, and Jeffrey Wuensch of Nexus] are deemed null and void;" in requesting that relief, plaintiffs are seeking to circumvent their obligation to exhaust their administrative remedies and commence simultaneously, to cause this court to act in an area where it lacks subject matter jurisdiction.

b) plaintiffs' claims against all defendants that the contract between the LaPorte County Commissioners and Nexus executed in 2004, should be declared "illegal and void" and that "all services provided by Nexus under 'Exhibit A' [the contract]" should be declared null and void, are barred by the doctrine of laches. Since the execution of that contract in 2004, the contract has been the catalyst for services which have provided the basis for preparation of tax bills by county and township officials, the related certification of tax rates, and the approval and issuance of tax bills, all without challenge to the legality of the contract and/or its implementation. Extreme prejudice to the county and township assessors, as well as LaPorte County government and its taxpayers would result in the form of the huge financial cost should that work now be

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undone and the county and local government be required to repeat those massive exercises.

Concomitantly, laches and its companion defense of estoppel defeat plaintiffs' claims against Nexus Group, Incorporated, Kelley & Wuensch. The prejudice to those defendants is self-evident given its significant investment of time and services over the course of the past three years. Plaintiff's suggestion that the remedy for Nexus Group should be to simply file a cross-claim against LaPorte County to recover payment for their services ignores the costs of litigation Nexus Group would incur in that pursuit, as well as the delay attendant thereto in obtaining relief.

Notably, Plaintiff's suggestion that Nexus Group should sue the county for unjust enrichment compounds the prejudice to defendant McDaniel in her official capacity as the Assessor of LaPorte County. First, LaPorte County and its taxpayers would incur the costs of additional litigation expenses, and, second, any judgment that might be entered against LaPorte County for services rendered would be imposed for services that, as plaintiffs would have it, are null, void, and meaningless.

Had plaintiffs challenged the validity of the contract in a timely fashion, one of the principal purposes of a declaratory judgment action - to avoid unnecessary damages or risk of liability by obtaining an authoritive resolution of issues before performance begins - would have been fulfilled. *Little Beverage Co., Inc. v Delrez*, 777 NE2d 74 (Inc. Ct. App 2002) trans. denied, 792 NE2d 41 (Ind. 2003). As it is, plaintiffs' actions here have the prospect of spawning piece-meal litigation, a result eschewed in declaratory judgment law. *Volkswagenwerk, A.G. v. Watson*, 181 Ind. App. 155, 390 N.E. 2nd 1082 (1979).

It is noted that persons "aggrieved" by a decision of the County Commissioners, including a decision to award a contract, have a statutory period of thirty (30) days from the date of the decision to appeal that decision to the Circuit Court. Ind. Code §36-2-2-27. *See generally, Haywood Pub. Co. v. West,* 39 N.E2d 785, 110 Ind. Ct. App. 568 (1942).

c) defendants Frank S. Kelly and Jeffrey S. Wuensch are entitled to judgment as a matter of loss for claims asserted against them in their individual capacity for the reasons that each of those defendants signed the contract at issue in the respective capacities as officers of NEXUS GROUP, INCORPORATED.

d) Carol McDaniel, as the duly elected Assessor of LaPorte County, is entitled to statutory immunity for the discretionary authority which she exercised in her recommendation to the LaPorte County Commissioners that they enter into a contract with Nexus Group, Inc., as counsel for plaintiffs, Bradley Adamsky, conceded at the hearing. Indiana Code §34-13-3-3.

e) It is emphasized that Assessor Carol McDaniel did not sign the contract with Nexus Group, Inc.. Rather, the contract was signed by the three county commissioners of LaPorte County. Plaintiff's counsel, Bradley Adamsky, has indicated at the hearing that for "tactical reasons" plaintiffs had decided to sue Carol McDaniel, as opposed to the county commissioners; plaintiffs contend that the commissioners acted as the "agent" of Ms. McDaniel in signing the contract. It is generally noted that while Indiana Code §6-1.1-4-18.5 does not specify what person or authority should let and receive bids for professional appraisal contracts, the legislature has specified that

obligation falls to the board of commissioners for public works projects in excess of seventy-five thousand dollars ($75,000.00), Ind. Code §36-1-12-4.

Carol McDaniel is entitled to judgment as a matter of law on the claim that she engaged in "Official Misconduct," a criminal offense defined by Indiana Code §35-44-1-2. In support of that claim, plaintiffs assert that "Carol McDaniel orchestrated the hiring of Nexus without seeking bids from other private vendors in direct violation of her duties of office." As previously indicated, however, Indiana Code §6-1.1-4-18.5 does not identify what person or entity is required to let and receive bids for professional appraisal services. Consequently, to blithely charge that Ms. McDaniel engaged in criminal activity is an allegation that simply cannot be sustained. Furthermore, the use of a declaratory judgment action to seek a determination that a person is guilty of criminal conduct is an inappropriate use of the Uniform Declaratory Judgment Act set forth in Indiana Code §34-14-1-1 et seq. It is the province of duty-elected prosecutors to protect the interests of the citizenry when criminal laws are violated; significant constitutional guarantees are implicated when a person is charged with committing a crime. In other words, where there is an alternative remedy and no necessity exists for the use of a declaratory judgment proceeding, the court should decline to provide that relief. *Ferrell v. Dunescape*, 751 NE2d 702 (Ind. Ct. App. 2001). Were the door open for any person or entity to use declaratory judgment actions to charge others with criminals acts, a litigation superhighway would be opened for those who would, for whatever reason - be it valid, specious, politically motivated, pure spite or otherwise - target a person or public official with a charge of criminal activity and force the public defense of the charge in a civil arena.

f) for those same reasons, all defendants are entitled to judgment as a matter of law with respect to the claim that they engaged in conspiracy as set forth in Count III. No civil cause of action exists for conspiracy. Charges of conspiracy are matters reserved to prosecutors in the criminal arena. The use of a declaratory judgment action to charge conspiracy is not proper and cannot support a remedy for the plaintiffs against defendants.

8. For all those reasons set forth, defendants are each entitled to judgment as a matter of law.
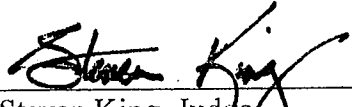
9. Whether the contract at issue is one which should necessarily have been let for bids is a subject on which genuine issues of material fact exist. Regardless of the resolution of that issue, however, no remedy or relief is available to the plaintiffs for the various reasons stated herein.

10. Finally, it is noted that plaintiffs have suggested that their cause of action be certified as a class action. While a representative or class action may be maintained in a declaratory judgment context, a class action lawsuit is improper when the requested class is too large and the questions of law and fact are not common and general to everyone in the class. *King v City of Gary,* 224 Ind. 294, 66 NE2d 888 (1946). Here, plaintiffs suggest a huge class consisting of all property tax papers in LaPorte County with diverse questions of fact, many of whom may have no quarrel with their property tax bills and who may not necessarily wish to proceed with litigation in which the taxpayers engage their government in costly litigation and, in effect, sue themselves.

WHEREFORE, IT IS ORDERED ADJUDGED, and DECREED that judgment be, and it is hereby, entered against all individually-named plaintiffs, as well as the

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MICHIGAN TOWNSHIP CITIZENS FOR FAIR TAXES, INC. and in favor of Carol

McDaniel, individually and as Assessor of LaPorte County, Indiana, NEXUS GROUP,

INCORPORATED, Frank S. Kelly, and Jeffrey S. Wuensch, jointly and severally, and

that plaintiffs shall take nothing by way of their Complaint for Declaratory Relief and

Damages.

Judgment issued this 7th day of March, 2008.

_____
Steven King, Judge
LaPorte Superior Court No. 2

Distribution to:

Attorney Carl Becker
3755 East 82nd Street, Suite 220
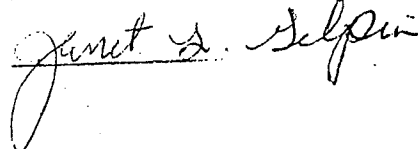Indianapolis, IN 46240

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Attorney Shaw Friedman
705 Lincolnway
LaPorte, IN 46350

CERTIFICATE OF SERVICE

I certify that on the ___7th___ day of ___March, 2008___
service of a true and complete copy of the above and
foregoing pleading or paper was made upon each party
or attorney of record herein by depositing the same in
the United States mail in envelopes properly addressed
to each of them and with sufficient first class postage
affixed.

8

YAHOO! MAIL
Classic

From: "Frank Kelly" <frank@nexustax.com>

To: "'Rushenberg, Tim'" <trushenberg@dlgf.in.gov>, cmusgrave@dlgf.in.gov, bwood@dlgf.in.gov

CC: "'Shaw Friedman'" <sfriedman.associates@verizon.net>, "'Marilyn Meighen'" <meighenlaw@att.net>, jeff@nexustax.com, "'Carl Becker'" <cbecker@nbbplaw.com>

Subject: cost tables updates

Date: Sun, 18 May 2008 09:44:34 -0500

Greetings,

Please review the specific, precise question I raised to the Department of Local Government Finance on 8-19-2007 and the specific, exacting response from the DLGF Staff Attorney Renee Lambermont on 8-24-2007. This clearly indicates that "Marshall & Swift" cost and depreciation adjustments are but only one of the available tools per 50 IAC 21 per the Department. This is in stark contrast to the grossly mistaken visual slide and public handout at the May 15, 2008 public hearing in Laporte County .

At your convenience, but before June 1, please let me know how the Department proposes to redress this egregious oversight and erroneous information that the Department widely disseminated at the public hearing. The Department's intentional error and the implications to Nexus Group's business interests are plain and obvious.

Frank Kelly, President
Nexus Group

From: Lambermont, Renee [mailto:rlambermont@dlgf.IN.gov]
Sent: Friday, August 24, 2007 7:32 AM
To: frank@nexustax.com
Subject: RE: Delaware County Directive

Mr. Kelly:

I apologize for not responding sooner. I am currently the only attorney at DLGF, so I have been running a little behind on email responses. Your email was sent before the formal Delaware County directive was issued. The formal directive was issued Monday and is now available on our website at http://www.in.gov/dlgf/. It was written more broadly than the letter sent to Delaware County , which you refer to below, and hopefully clears up your questions and concerns. As you will notice in the findings on page 2 of the formal directive, 50 IAC 21 is referenced and states that if there are insufficient sales, assessing officials shall use other data and information, including, but not limited, to Marshall and Swift cost and depreciation tables, etc. Throughout the directive, DLGF review and approval is required, including when the estimates of value are determined using the cost and depreciation tables. When it comes to the county determining estimates of value, the DLGF will evaluate the cost and depreciation tables at that point and determine whether the estimates of value generated from them are acceptable. We are not attempting to exclude your product; the DLGF's main concern is that the cost and depreciation tables are reflective of actual costs in the marketplace. If your product reflects this, I do not see why it would be excluded from consideration.

Renée C. Lambermont
Staff Attorney
Department of Local Government Finance
100 N. Senate Avenue, Room N1058
Indianapolis, IN 46204
Phone: (317) 232-3775
Fax: (317) 232-8779

EXHIBIT
F

From: Frank Kelly [mailto:frank@nexustax.com]
Sent: Sun 8/19/2007 10:53 PM
To: Wood, Barry
Cc: Barrow, Kurt
Subject: Delaware County Directive

Greetings:

I am concerned with one aspect of the Delaware County directive and potentially subsequent similar directives. Specifically, the second required action states,
"Acquire commercial and industrial cost-based pricing data from a nationally recognized vendor and install the pricing data on the county's computers."

The concern that I wish to express is that this language may be exclusionary, and if so, hopefully unintentionally. My firm – Nexus Group - has undertaken an extensive, thorough update of all Indiana commercial & industrial cost tables as illustrated in Appendix G. These updates, and CAMA-system specific versions thereof, are currently in use by twenty (20) Indiana counties for 2006. We are in process of implementing similar cost table updates for 2007 in all those counties, plus additional ones. We have gone to the additional expense to have these revised cost tables copyrighted. To the best of my knowledge, not only are we the only Indiana-based firm to engage in such a specific update, but no other firms whatsoever and regardless of location offer a similar product specific to the Indiana commercial/industrial costs.

As perhaps you are aware, it is simply not possible to purchase an existing commercial / industrial costing system from any "national" vendor and directly implement that into any CAMA system currently operating in Indiana . While many (but certainly not all) pricing elements could be located, they are not in an easily convertible format.

Further, the DLGF's additional assessment reviews released through 8-17-07 have resulted in several reassessment initiates. Likewise, even more counties have received additional DLGF approval of their 2006 real property values as corresponding with the intent of Indiana law and 50 IAC 21.

To date, all the counties in which Nexus Group has updated costs have been in this latter, approved group, and none in the former, mis-assessed group. The inference here is that whatever we are doing with cost updates appears to assist in the compliance of these counties real property assessments with applicable Indiana Code and/or administrative code.

While I am not as familiar with the assessment updates in other non-client counties, I know that some have used income and/or sales information to individually update some portion of their commercial/industrial parcels, post-costing process. Other counties have implemented a common percentage cost update, in combination with the above-referenced technique. However, I know of no other systematic, specific effort to update and implement the approximate 3000 cost elements contained in Appendix G.

Please let me know at your earliest convenience and in writing if the DLGF feels that Nexus Group meets that intent of the second directive referenced above. Failing that, can your office provide a preemptive response to this issue if my firm provided a bid to or was engaged by this or other county similarly directed to perform such updates?

Thanks for your time,
Frank Kelly, President
Nexus Group

STATE OF INDIANA   )
) SS: IN THE LAPORTE SUPERIOR COURT NO. 2
COUNTY OF LAPORTE   )   2007 TERM

MICHAEL CONNOR, et al.,)   CAUSE NO. 46D02-0709-PL-129
        Plaintiffs,   )
)
   vs.   )
)
CAROL MCDANIEL,   )
Individually and as Assessor)
Of LaPorte County, Indiana,)
NEXUS GROUP, INC.,   )
FRANK S. KELLY AND   )
JEFFREY S. WUENSCH,   )
        Defendants.   )

DEFENDANT MCDANIEL'S MOTION TO DISMISS

Comes now Defendant Carol McDaniel, by counsel Shaw R. Friedman of Friedman &
Associates, P.C., and moves this Court to dismiss the Complaint for Declaratory Judgment and
Damages filed herein by the Plaintiffs, with prejudice. In support thereof, said Defendant would
show as follows:

I.   Tort Claim Requirements/Immunity of Governmental Entity

As a threshold question, the Plaintiffs' Complaint should further be dismissed as they
have utterly failed to comply with the Notice of Tort Claim requirements necessary when
bringing suit against a governmental entity. Although the Plaintiffs have named Defendant
McDaniel only in their suit and not the LaPorte County Assessor's Office, by naming Ms.
McDaniel as LaPorte County Assessor, in her official capacity, they are in essence also naming
the governmental entity the LaPorte County Assessor's Office and therefore are subject to the
Tort Claim requirements.

The problem of misnomers of capacity in suits involving governmental representatives
has in the past plagued the bench and bar of Indiana. See Harvey, *Indiana Practice*, Vol. 2, p.
252, Civil Code Study Commission Comments 19(F). Prior decisions concerning this problem,
as noted in the Comments cited above, have become so contradictory and confusing as to serve

no meaningful guideline. However, Trial Rules 19(F), 21(A) and 15(C), *Indiana Rules of Procedure*, succinctly provide an answer to this dilemma. Trial Rule 19(F) provides, in pertinent part:

> "(F)   Governmental organizations and representatives thereof as parties. Suits by or against a governmental organization or governmental representative relating to the acts, power or authority of such organization or representative, including acts under purported power or authority or color thereof by such organization or representative, shall be governed by this provision.
>
> (1)   Suits by or against a governmental organization or against a representative in his official capacity shall be brought in the name of the governmental organization. Suits naming a governmental representative by his official title or by his name along with his official title shall be deemed to name and include the governmental organization which he represents..."

Governmental entities are subject to liability for the torts committed by their employees (unless one of the exceptions in the Act applies). *Mullin v. Municipal City of South Bend*, 639 N.E.2d 278, 281 (Ind. 1994). The Act requires notice of the tort claim within 180 days of the claimed loss, or the claim is barred. See Ind. Code 34-13-3-8 (formerly at I.C. 34-4-16.5-7). Because the Act is a statute in derogation of the common law, it must be strictly construed against limitations on the claimant's right to bring suit. *Hinshaw v. Board of Comm'rs of Jay County*, 611 N.E.2d 637, 639 (Ind. 1993). Although there may be factual issues to be determined, whether there has been compliance with the Act's notice requirement is a question of law for the court. See *Lake County Juvenile Court v. Swanson*, 671 N.E.2d 429, 437 (Ind. Ct. App. 1996), trans. denied. Generally, the plaintiff bears the burden of proving compliance with the notice provisions of the Act. See *State, Ind. Dept. of Highways v. Hughes*, 575 N.E.2d 676, 678 (Ind. Ct. App. 1991). A determination about compliance with the Act is subject to review as a negative judgment, which the Court of Appeals will reverse only if contrary to law. *Hupp v. Hill*, 576 N.E.2d 1320, 1324 (Ind. Ct. App. 1991).

I.C. 34-13-3-8, et seq. provides that a claim against a political subdivision is barred unless notice is filed with: (1) the governing body of that political subdivision; and (2) the Indiana political subdivision risk management commission created under I.C. 27-1-29; within 180 days after the loss occurs.

A governmental entity or an employee acting within the scope of the employee's employment is not liable if a loss results from, inter alia, "The performance of a discretionary function..." or "Misrepresentation if unintentional". I.C. 34-13-3-3 et seq. A present or former public employee, including a member of a board, a committee, a commission, an authority, or other instrumentality of a governmental entity, is not personally liable on contracts entered into within the scope of the employee's employment for a governmental entity unless it is clearly otherwise indicated in writing. I.C. 34-13-2-1.

Therefore, as evidenced herein, the Plaintiffs failed to comply with the requirements of the Indiana Tort Claims Act which are incumbent upon any persons bringing suit against a governmental entity. Further, Defendant McDaniel as an employee of a governmental entity, is not liable for any loss alleged by the Plaintiffs, pursuant to the provisions of I.C. 34-13-2-1 and I.C. 34-13-3-3, et seq.

II.   Lack of Subject Matter Jurisdiction / Tax Court Has Jurisdiction

That the Plaintiffs' Complaint for Declaratory Judgment and Damages, which was filed in this Court on or about September 13, 2007 centers around the issue of general real property tax reassessment and services related thereto. As such, jurisdiction of such matter is vested with the Indiana State Tax Court. The Tax Court was created in order to consolidate tax-related litigation in one court of expertise, and to deprive trial courts around the State of jurisdiction to address these issues. *State ex rel. AG of Ind. V. Lake Superior Court*, 820 N.EA.2d 1240, 1247 (Ind. 2005). "The Tax Court has exclusive statewide jurisdiction over all original tax appeals, and venue of all original tax appeals shall lie only in the Tax Court." Tax Court Rule 13. The Legislature intended that all challenges to the tax law – regardless of the legal theory relied on – be tried in Tax Court. *State v. Sproles*, 672 N.AE.2d 1353, 1358 (Ind. 1996). "Subject matter jurisdiction is the power of a court to hear and determine the general class of cases to which the

proceedings before it belong." *Musgrave v. State Bd. of Tax Comm'rs*, 658 N.E.2d 135, 138 (Ind. Tax Ct. 1995) (citation omitted). A determination as to whether subject matter jurisdiction exists "depends on whether the type of claim advanced by the petitioner falls within the general scope of authority conferred upon the court by constitution or statute." *Id.* The general scope of authority conferred upon the Tax Court is governed by Indiana Code § 33-26-3-1. This statute provides that the Tax Court has "exclusive jurisdiction over any case that arises under the tax laws of Indiana and that is an initial appeal of a final determination" of the Indiana Board. IND. CODE ANN. § 33-26-3-1 (West 2006). "Jurisdiction over the particular case refers to the 'right, authority, and power to hear and determine a specific case within the class of cases over which a court has subject matter jurisdiction.'" *Carroll County*, 733 N.E.2d at 50 (quoting *Adler v. Adler*, 713 N.E.2d 348, 352 (Ind. Ct. App. 1999)). When this Court has subject matter jurisdiction pursuant to Indiana Code § 33-26-3-1, an appeal is subject to the requirements of the Administrative Orders and Procedures Act (AOPA), as well as the Indiana Tax Court Rules. *See* IND. CODE ANN. § 6-1.1-15-5(b) (West 2006); IND. CODE ANN. § 4-21.5-5 (West 2006); Ind. Tax Court Rule 1. The Court's subject matter jurisdiction is governed by Indiana Code § 33-26-3-1. This claim brought by twenty-seven individual taxpayers is a backdoor means by which to attack assessments on the Plaintiffs' individual properties. It is clearly related to such tax issues and the services rendered to each individual assessment.

As this honorable Court does not have jurisdiction herein, the plaintiffs' cause should be dismissed.

III. Lack of Subject Matter Jurisdiction – Public Lawsuit Provision If Subject to Competitive Bid

The Plaintiffs in the instant matter have failed to exhaust administrative remedies prior to the filing of their Complaint. Defendant McDaniel would aver that the engagement of a tax assessment firm is akin to other professional services routinely granted by LaPorte County without the need for completive bidding. Unlike a time and materials construction contract, a professional assessment firm is providing advise and assistance comparable to that provided by legal counsel which is also routinely granted without competitive bidding.

If, however, this Court were to determine that such engagement might be subject to competitive bid standards, then again Plaintiffs are blocked from asserting their claim by not having complied with the public lawsuit provision. As Plaintiffs contend that the engagement of a professional tax assessment service is subject to competitive bid requirements, they should be required to exhaust remedies available under public lawsuit provisions. Furthermore, Plaintiffs have not cited any evidence that they objected to or remonstrated against the granting of such contract to Nexus Group at or around the time of contract award. They should be viewed as having waived such right by having asserted no objection or remonstrance in the ensuing three years. A person may not initiate a suit against a governmental entity unless the person's claim has been denied in whole or in part. I.C. 34-13-3-13.

In the instant cause, the Plaintiffs have failed to exhaust their administrative rights prior to initiating suit and as such this matter should be dismissed.

IV. Laches

Defendant McDaniel would further assert that the Plaintiffs' Complaint should be barred based on the inexcusable delay of the Plaintiffs in bringing suit, as the Complaint centers around an Agreement, attached as Exhibit "A" to the Plaintiffs' Complaint, which by the Plaintiffs' own admission was entered into by the LaPorte County Commissioners more than three years prior to the initiation of the instant suit. As such, this matter is appropriately barred by the defense of laches. Laches is an "equitable defense [that] may be raised to stop a person from asserting a claim that he would normally be entitled to assert." *Storm, Inc. v. Indiana Dep't of State Revenue*, 663 N.E.2d 552, 557 (Ind. Tax Ct. 1996) (citing *Haas v. Holder*, 218 Ind. 263, 32 N.E.2d 590 (Ind. 1941)). "The rationale behind the doctrine of laches is that a person who, for an unreasonable length of time, has neglected to assert a claim against another waives the right to assert his claim when this delay prejudices the person against whom he would assert it." Id. The defense of laches has three elements: (1) inexcusable delay in asserting a right; (2) an implied waiver arising from knowing acquiescence in existing conditions; and (3) circumstances resulting in prejudice to the adverse party. Id.; accord Beiger Heritage Corp. v. Kilbey, 676 N.E.2d 784, 789 (Ind. Ct. App. 1997). "The doctrine of laches may bar a plaintiff's claim if the defendant can show: (1) plaintiff's inexcusable delay in asserting his or her rights, (2) plaintiff's

implied waiver arising from knowing acquiescence in existing conditions, and (3) prejudice to the defendant due to the delay." *Shearer v. Pla-Boy, Inc.* (1989), Ind.App., 538 N.E.2d 247, 254 (citations omitted). The mere passage of time is insufficient; the defendant must also show that the plaintiff's delay was unreasonable and that the defendant was prejudiced as a result. *Id.* "The doctrine of laches may bar a plaintiff's claim even though the applicable statute of limitations has not yet expired if the laches are of such character as to work an equitable estoppel (which contains the additional element of reliance by the defendant)." *Id.* (citing *Siddall v. City of Michigan City* (1985), Ind.App., 485 N.E.2d 912; *Pickett v. Pickett* (1984), Ind.App., 470 N.E.2d 751). In the instant case, the Plaintiffs Complaint involves an Agreement allegedly entered into by the LaPorte County Commissioners on or about June 24, 2004, more than three years prior to the Plaintiffs initiating suit herein. Due to such inexcusable delay, the doctrine of laches applies and the instant cause should be dismissed. The services rendered by the Nexus Group have been ongoing for nearly three years. An assessment has been completed and approved by the State of Indiana with tax bills close to being mailed to taxpayers. Halting this process at this late date dye to an untimely challenge to this contract would do a substantial injustice to the taxpayers of LaPorte County. Plaintiffs should be equitably estopped from doing so.

V.   Good Faith Reliance on Attorney General Opinion

That Defendant McDaniel, would assert that any alleged error with regard to the competitive bid process was made in good faith and not with malicious or fraudulent intent. Indeed, 1976 Opinion No. 26 of the Indiana Attorney General addresses the issue of whether competitive bidding is required in awarding professional appraisal contracts for reassessment. (See attached Exhibit "A"). This opinion provided ample legal basis not to seek competitive bidding for the engagement of such services.

As set forth in said Attorney General's Opinion, I.C. 6-1.1-4-16 authorizes any township assessor and any county assessor to employ technical advisers for the purpose of making a general reassessment. As a general rule, contracts for the personal services of accountants, attorneys, physicians, and other professional persons who are being employed because of their special training, skill and expert knowledge and who are furnishing only services – not a combination of services and supplies, materials or equipment – need not be awarded on the basis

of competitive bids. The law governing contracts with state agencies, for example, provides expressly that "competitive bids" shall not be required for professional services" and further states that "the purchase of highly skilled or professional services...(is) not properly subject to competitive bidding." I.C. 4-13-2-11 and 4-13-2-13. Consequently, if the technical services which appraisers are employed to render under Code section 6-1.1-4-16 are "professional services", competitive bidding would not be required in awarding employment contracts to them. Although this precise question has not been squarely presented to the Indiana courts, other jurisdictions unanimously have held that contracts for appraisal services are for professional services and thus exempt from general competitive bidding requirements for public contracts. See Hellman v. St. Louis County (So. 1957), 302 S.W.2d 911 and Parker v. Panama City (Fla. App. 1963), 151 So. 2d 469. (Official Opinion No. 26).

It was therefore concluded in said opinion that the Indiana General Assembly has provided that contracts to employ professional appraisers and professional appraiser firms as technical consultants for the purpose of making a general reassessment need not be awarded on the basis of competitive bids where the appraisers or firms are providing professional services only and not a combination of services and supplies, materials or equipment.

In the instant case, the Defendants relied on said Opinion in making the determination that the awarding of the contract to a professional appraiser firm to provide technical consulting services with regard to the general reassessment was therefore exempt from the competitive bidding requirement. As such, the Plaintiffs are unable to provide any evidence to support its allegations that the actions of the Defendants in awarding said contract was done with any unlawful intent or constituted official misconduct but rather said action was undertaken in good faith in reliance on the herein referenced Opinion which provided for the awarding of said contract without competitive bidding being necessary for such services.

VI.   Conclusion

For and all of the foregoing reasons asserted herein, Defendant McDaniel would respectfully request that this Court enter an Order dismissing the Plaintiffs' Complaint for

Declaratory Judgment and Damages as filed herein on September 13, 2007, with prejudice, and for any and all other relief just and proper in the premises.

Respectfully submitted,

Shaw R. Friedman #8482-46
FRIEDMAN & ASSOCIATES, P.C.
705 Lincolnway
LaPorte, IN 46350
(219) 326-1264
Attorneys for Defendant McDaniel

Certificate of Service

I hereby certify that on this 9 day of Nov. , 2007 I did cause a true and accurate copy of the foregoing pleading to be served on the following parties of record, by first-class mail, postage thereon prepaid:

Mark L. Phillips, Esq.
Bradley J. Adamsky, Esq.
916 Lincolnway
P.O. Box 1816
LaPorte, IN 46350

Carl J. Becker, Esq.
Alan A. Bouwkamp, Esq.
3755 East 82nd Street, #220
Indianapolis, IN 46240-2423

Shaw R. Friedman #8482-46
Attorney for Defendant McDaniel

1976

OPINION 26

OFFICIAL OPINION NO. 26

December 23, 1976

Honorable Merwyn T. Fisher
Indiana State Representative
Rural Route #2
Pekin, Indiana 47165

Dear Representative Fisher:

This is in response to your request for an official opinion as to whether competitive bidding is required in awarding professional appraisal contracts for reassessment.

ANALYSIS

Indiana Code, section 6-1.1-4-16 authorizes any township assessor and any county assessor to employ technical advisers for the purpose of making a general reassessment. Code section 6-1.1-4-17 states that these technical advisers may be professional appraisers or professional appraising firms and provides that if a majority of township assessors in a county vote to employ a professional appraiser or professional appraising firm to act as technical adviser, the majority may contract with that appraiser or firm to provide advice for all townships in the county. However, the township assessor or group of assessors may not use a professional appraiser or appraising firm unless a written contract exists. Pursuant to Code section 6-1.1-4-18, the contract either must be specifically approved by the State Board of Tax Commissioners or must be a standard contract developed by the Board.

At the outset, it should be noted that although the General Assembly has prescribed in detail procedures for the employment of professional appraisers, it has not included a provision which would require the competitive bidding of their employment contracts.

Furthermore, as a general rule, contracts for the personal services of accountants, attorneys, physicians, and other professional persons who are being employed because of their special training, skill, and expert knowledge and who are

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furnishing only services—not a combination of services and supplies, materials, or equipment—need not be awarded on the basis of competitive bids. The law governing contracts with state agencies, for example, provides expressly that "competitive bids shall not be required for professional services" and further states that "the purchase of highly skilled or professional services * * * (is) not properly subject to competitive bidding." Code sections 4-13-2-11 and 4-13-2-13. Consequently, if the technical services which appraisers are employed to render under Code section 6-1.1-4-16 are "professional services," competitive bidding would not be required in awarding employment contracts to them. Although this precise question has not been squarely presented to Indiana courts, other jurisdictions unanimously have held that contracts for appraisal services are for professional services and thus exempt from general competitive bidding requirements for public contracts. See *Hellman v. St. Louis County* (Mo. 1957), 302 S.W. 2d 911 and *Parker v. Panama City* (Fla. App. 1963), 151 So. 2d 469.

CONCLUSION

It is, therefore, my Official Opinion that the Indiana General Assembly has provided that contracts to employ professional appraisers and professional appraisal firms as technical consultants for the purpose of making a general reassessment need not be awarded on the basis of competitive bids where the appraisers or firms are providing professional services only and not a combination of services and supplies, materials, or equipment.

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Exhibit "A"

STATE OF INDIANA   )
)   SS: IN THE LAPORTE SUPERIOR COURT NO. 2

COUNTY OF LAPORTE   )

MICHAEL CONNOR, LINDA O'MAHONEY)	
DONALD LAYELLE, JOHN T. MCKITRICK,)	
JOHN WILSON, JUDY CURITS, WILLIAM)	
WOZNEY, BRIGID MCKITRICK, MARY JANE)	
FERNANDEZ, KATHERINE BRENNAN,)	
BETTY FLYNN, HOWARD A. MASON,)	
SHARON STITCH, DAVID KAPLAW,)	
SUELLEN KELLEY-BERGERSON, JEROME)	
SLOMKA, JUDITH WOLFORD, MOLLIE)	
MCKITRICK, JOHN P. CONNOLLY, KAREN)	
V. RAFTER, JAMES KENSIK, KATHERINE A.)	
KELLEY, RITA FINK, JERRY MUCH,)	
THOMAS MARREN, JOSEPH WAICKUS,)	
GEORGE HENDAY, and TOM STROPKY,)	
NAMED PLAINTIFFS, taxpayers and residents)	
of LaPorte County, on behalf of themselves and)	
others similarly situated,)	
and MICHIGAN TOWNSHIP CITIZENS)	
FOR FAIR TAXES, INC. (an Indiana Not)	
for Profit Corporation),)	
)	
Plaintiffs,)	
)	CAUSE NO.
v.)	
)	46D02 0709PL129
CAROL McDANIEL, individually and as)	
Assessor of La Porte County, Indiana,)	
NEXUS GROUP, INCORORATED, FRANK S.)	
KELLY, and JEFFREY S. WUENSCH,)	
)	
Defendants.)	

COMPLAINT FOR DECLARATORY JUDGMENT AND DAMAGES

Plaintiffs, Michael Conner, Linda O'Mahoney, Donald Layelle, John T. McKitrick,

John Wilson, Judy Curtis, William Wozney, Brigid McKitrick, Mary Jane Fernandez, Katherine

Brennan, Betty Flynn, Howard A. Mason, Sharon Stitch, David Kaplaw, Suellen Kelley-

Bergerson, Jerome Slomka, Judith Wolford, Mollie McKitrick, John P. Connolly, Karen V. Rafter, James Kensik, Katherine A. Kelley, Rita Fink, Jerry Much, Thomas Marren, Joseph Waickus, George Henday, and Tom Stropky as taxpayers, residents and owners of property in LaPorte County, on behalf of themselves and all others similarly situated, and MICHIGAN TOWNSHIP CITIZENS FOR FAIR TAXES, INC., (an Indiana Not for Profit Corporation), by Counsel, pursuant to I.C. 34-14-1, *et seq* (Uniform Declaratory Judgment Act) for their complaint against the Defendants, CAROL MCDANIEL , LaPorte County Assessor, NEXUS GROUP, INCORPORATED, FRANK S. KELLY and JEFFREY S. WUENSCH, allege and say as follows:

I. Parties

1.   Plaintiffs, Michael Conner, Linda O'Mahoney, Donald Layelle, John T. McKitrick, John Wilson, Judy Curtis, William Wozney, Brigid McKitrick, Mary Jane Fernandez, Katherine Brennan, Betty Flynn, Howard A. Mason, Sharon Stitch, David Kaplaw, Suellen Kelley-Bergerson, Jerome Slomka, Judith Wolford, Mollie McKitrick, John P. Connolly, Karen V. Rafter, James Kensik, Katherine A. Kelley, Rita Fink, Jerry Much, Thomas Marren, Joseph Waickus, George Henday, and Tom Stropky are all either owners of real estate in La Porte County, Indiana, taxpayers in LaPorte County, Indiana, or residents of LaPorte County, Indiana. The class is so numerous that it is impracticable to bring them all before the court; there are questions of law or fact common to the entire class of persons; the claims of the Plaintiffs are typical of the claims of the class; and the Plaintiffs will fairly and adequately protect the interest of the class.

2.   The plaintiff MICHIGAN TOWNSHIP CITIZENS FOR FAIR TAXES, INC. is an Indiana Not-for-Profit Corporation, whose members are taxpayers and residents of the State of Indiana, including the County of LaPorte, Indiana.

3. The defendant Carol McDaniel is the elected Assessor of the County of LaPorte, State of Indiana.

4. The defendant Nexus Group, Incorporated ("Nexus") is a corporation in the State of Indiana. Frank S. Kelly is the President of Nexus and Jeffrey S. Wuensch is the Chief Operating Officer of Nexus.

II. Legal Background

5. Article 10, Section 1 of the Constitution of the State of Indiana requires the Indiana General Assembly to provide for a uniform and equal rate of property assessment and taxation and further requires the General Assembly to prescribe regulations to secure a just valuation for taxation of all property, both real and personal, located within the State of Indiana.

6. For many decades before 1995, the real estate located within the State of Indiana was assessed by local taxing authorities on a "true tax value" methodology, which included costs of reproduction, cost schedules and other methods of assessing property for tax purposes.

7. In July, 1995 the Indiana Tax Court found that Indiana's system of real property taxation was unconstitutional.

8. In 1996 and 1998 the Supreme Court of Indiana essentially affirmed the holding of the Indiana Tax Court, with certain minor modifications. The Supreme Court held that the Indiana General Assembly must provide for a "uniform and equal rate of property assessment and taxation based on property wealth."

III. Factual Background

9. In response to the holdings of the State's highest Court the Indiana General Assembly adopted legislation requiring general reassessment of all real property in the State of Indiana as of March 1, 2002 and March 1, 2006. The Indiana Department of Local Government

Finance ("DLGF") adopted and distributed its *2002 Real Property Assessment Manual* ("Manual") for use by the State's County and Township Assessors. The Manual states that assessment of real property in the State of Indiana is to be based on "fair market value data of property wealth". Indiana's taxing authorities have attempted to implement a "property wealth" system of assessing and taxing real estate in the State of Indiana.

10.   The Manual states that a county assessor in conjunction with the township assessors in her county can enter into a written contract to employ professional appraisers, individuals or firms as technical advisors. The advisors must be certified, the contract must be in writing, and notice must be given to solicit bids from anyone desiring to furnish the service before a contract is awarded.

11.   The section of the Manual regarding employment of professional appraisers has been codified under Indiana Code §§ 6-1.1-4-17 and 6-1.1-4-18.5.

12.   On or about June 24, 2004, Carol McDaniel, the County Assessor of LaPorte County, Indiana, by and through the LaPorte County Commission acting as her lawful agent, entered into a "Professional Services Agreement" with Nexus, a true and accurate copy of which is attached to this complaint as Exhibit "A" and incorporated by reference.

13.   Exhibit "A" was entered into on Carol McDaniel's insistence, on her recommendation, on her behalf, without compliance with I.C. 6-1.1-4-17 and I.C. 6-1.1-4-18.5.

14.   Carol McDaniel ignored the laws of the State of Indiana, ignored her sworn oath of office, and unlawfully entered into the contract with Nexus.

IV.

Count One - Request for Declaratory Judgment

For their first claim for relief the Plaintiffs respectfully request the following:

1-14.   Plaintiffs re-allege the preceding paragraphs numbered 1-14 and incorporate said allegations by this reference.

15.   The LaPorte County Assessor, Carol McDaniel recommended Nexus to the LaPorte County Commission without first soliciting bids from anyone else desiring to provide the services.

16.   Acting as Carol McDaniel's agent and on her behalf, the LaPorte County Commission signed the contract with Nexus without publishing notice to solicit bids from anyone else desiring to provide the services.

17.   The actions of Carol McDaniel and her agent, the LaPorte County Commission, of entering into the contract with Nexus without soliciting bids violates Indiana Code and unlawfully restricts competition, therefore making the contract illegal and void.

18.   The illegal contract calls for the payment to Nexus of more than $1 Million from the taxpayers of LaPorte County, Indiana.

19.   Nexus, Kelly, and Wuensch have benefited from the illegal contract and have been significantly and unjustly enriched to the detriment of the plaintiffs.

20.   The defendants, McDaniel, Nexus, Kelly and Wuensch should be made to repay to the taxpayers of La Porte county, Indiana, all amounts paid to Nexus under Exhibit "A".

21.   The public interest would be vindicated by voiding the illegal contract in that competition is unlawfully restrained when public contracts are not properly bid.

22.   Plaintiffs have been forced to seek private enforcement of the statutory requirements against the defendants, and the accompanying burden on Plaintiffs is inequitable.

23.   In addition to Plaintiffs, all taxpayers of LaPorte County, Indiana will benefit from this action in that more than $1 Million is to be paid to Nexus under the illegal contract and

a substantial savings to the public treasury of La Porte County, Indiana, will be realized in this case.

24. Plaintiffs are entitled to an award of fees and expenses against defendants.

For all the above reasons the Plaintiffs request the Court to review the underlying facts and law in this cause, to certify the class as proposed above, and to enter judgment finding and declaring:

a.) That the Defendants, by their failure to properly solicit bids for the services described in Exhibit "A" have engaged in restricting competition in violation of Indiana Code § 24-1-2-3;

b.) That, Exhibit "A" is illegal and void;

c.) That all services provided by Nexus under Exhibit "A" are deemed null and void;

d.) That Defendant Nexus must jointly and severally repay to the taxpayers of LaPorte County, Indiana all sums paid or to be paid under Exhibit "A";

e.) That Defendants should be ordered to pay all fees and expenses of Plaintiffs.

V.

Count Two – Official Misconduct

For Count Two of their Complaint, Plaintiffs state:

1-24. The Plaintiffs re-allege paragraphs 1-24 of Count I of this complaint as though fully set forth herein.

25. Carol McDaniel, by virtue of her position as LaPorte County Assessor, knew or should have known of the statutory requirements for hiring a private vendor such as Nexus to perform assessing functions for the County.

26.   Nonetheless, Carol McDaniel orchestrated the hiring of Nexus without seeking bids from other private vendors in direct violation of her duties of office.

27.   In a transparent attempt to circumvent the duties of her office to advertise and bid the work described in Exhibit "A", McDaniel arranged for Exhibit "A" to be signed by the La Porte County Commission as her agent.

28.   Carol McDaniel knowingly violated the laws of Indiana by entering into Exhibit "A" with Nexus.

29.   Under Exhibit "A", Nexus is to be paid more than $1 Million of taxpayer funds.

30.   Plaintiffs as well as other citizens of LaPorte County, Indiana, have suffered harm from the illegal contract in that taxpayer money was paid and is being paid to Nexus illegally.

31.   Plaintiffs as well as other citizens of LaPorte County will continue to suffer great, immediate and irreparable injury if the services of Nexus are continued, as the County will be spending tax revenue on an illegal contract.

32.   The actions of Carol McDaniel constitute official misconduct as set forth in I.C. 35-44-1-2.

33.   McDaniel should be made to repay to the treasury of La Porte County, Indiana, all sums paid to Nexus.

VI.

Count Three – Conspiracy

For Count Three of their Complaint, Plaintiffs state:

1-33.   The Plaintiffs incorporated by reference rhetorical paragraphs 1-33 of Count Two of this complaint as though fully set forth herein.

34.   The defendants, Nexus, Jeffrey Wuensch and Frank Kelly, knew of the requirements to bid on a contract for the employment of an appraiser/technical advisor.

35.   Exhibit "A" is the type of contract that is the subject of Indiana Code §§ 6-1.1-4-17 and 6-1.1-4-18.5.

36.   Through their actions in entering Exhibit "A" Nexus, Wuensch and Kelly purposely attempted to circumvent the law.

37.   The actions of Nexus, Wuensch and Kelly were purposely designed to deprive the taxpayers of LaPorte County, Indiana of tax funds without first complying with the applicable laws of Indiana.

38.   Nexus, Wuensch and Kelly conspired with Carol McDaniel to enter into an illegal contract with the goal of misappropriating more than $1 Million from the taxpayers of LaPorte County, Indiana.

39.   The actions of the defendants are egregious, performed in bad faith, reek of misconduct and justify the imposition of punitive damages.

FOR THE ABOVE REASONS, Plaintiffs pray for judgment against Carol McDaniel, individually and in her capacity as Assessor of La Porte County, Indiana in an amount adequate to fully compensate Plaintiffs and the taxpayers of La Porte County, Indiana for all moneys that have been and will be paid to Nexus under the illegal contract.

NEWBY, LEWIS, KAMINSKI & JONES, LLP

By: _____
Mark L. Phillips
Bradley J. Adamsky
Attorneys for Plaintiffs
916 Lincolnway, P.O. Box 1816
La Porte, Indiana 46350
Telephone: 219.362.1577

FOR THE ABOVE REASONS, Plaintiffs pray for judgment certifying the class as proposed above, and for judgment against the defendants as follows:

a.)   For judgment requiring that Nexus, McDaniel, Wuensch and Kelly reimburse the

taxpayers of LaPorte County, Indiana all of the funds paid and received under the illegal contract as well as punitive damages in an amount adequate to penalize the defendants and to deter them and other similarly situated persons from engaging in such behavior in the future;

b.) For attorneys fees and costs;

c.) Directing and compelling the elected public officials of LaPorte County to perform their duties as required by statute; and

d.) For all other appropriate relief.

NEWBY, LEWIS, KAMINSKI & JONES, LLP

By: _____
Mark L. Phillips
Bradley J. Adamsky
Attorneys for Plaintiffs
916 Lincolnway, P.O. Box 1816
La Porte, Indiana 46350
Telephone: 219.362.1577

Jury Demand

Plaintiffs demand trial by jury.

NEWBY, LEWIS, KAMINSKI & JONES, LLP

By: _____
Mark L. Phillips
Bradley J. Adamsky

PROFESSIONAL SERVICES AGREEMENT: DRAFT

This SERVICE AGREEMENT (the "AGREEMENT") is made and entered into as of this
2.4 day of June 2004 by and between Nexus Group, Inc. ("Nexus") and the LaPorte
County Commission, on behalf of County Assessor of LaPorte County, Indiana
("Client").

RECITALS:

Whereas, Nexus operates a tax research and consulting firm based in Indiana and has
certain skills and expertise in regards to the services to be performed;

Whereas, Client desires to retain the benefit of Nexus's service, knowledge, skills and
expertise in certain specified areas of Indiana property taxation; and

Whereas, Client and Nexus are desirous of documenting the terms and conditions of said
relationship;

The foregoing recitals are adopted by the parties as being true and accurate statements,
and are hereby incorporated as binding representations of this Agreement. Now,
therefore, in consideration of the premises and the mutual covenants, agreements and
representations herein contained, and other good and adequate consideration, the receipt
of which is hereby acknowledged, it is hereby agreed as follows:

1. **Engagement.** Client hereby engages Nexus as a service provider, consultant
    and advisor to the Client with respect to the matters identified in Section 2
    hereof and in Attachment 1 to this AGREEMENT for the compensation as set
    forth in Section 3 hereof and for the term as set forth in Section 5 hereof.
    Nexus hereby accepts this engagement by Client as a service provider,
    consultant and advisor with respect to such matters and for such compensation
    and term.

2. **Services to be Performed.** During the term of this AGREEMENT, Nexus
    shall provide verbal and/or written reports, communications, data analysis and
    other related and necessary information ("Services") to the Client in general
    regards to property class ratio studies, income analysis, neighborhood
    delineations, neighborhood factors, land valuation as may be desired by the
    Client, for all property classes (vacant and improved) on a delivery schedule
    mutually agreeable to both Client and Nexus. These Services and deliverables
    are further outlined and detailed in Attachment 1 to this AGREEMENT.
    Client and Nexus may alter the scope and nature of the Services upon mutual
    agreement. Nexus shall work closely with Client to ensure that Nexus
    completes those Services necessary so that Client meets all statutory
    deadlines. Nexus agrees to work in conjunction with the Client and other
    service providers, including but not limited to those associated with the
    reassessment and/or software provision, to integrate and transfer information

so as to provide information to the Client in a uniform format. All work product of Nexus shall meet the requirements as established by the Department of Local Government Finance consistent with Regulation 17 as detailed in Version A of the 2002 Real Property Assessment Manual, any subsequent alterations to this document, as well as pertinent and other related adopted rules.

3.   Compensation. In consideration for the Services as described in Section 2 hereof Nexus shall receive the following sums:

April ___, 2004 to March 31, 2005	-	$189,000.00
April 1, 2005 to March 31, 2006	-	$219,000.00
April 1, 2006 to March 31, 2007	-	$219,000.00
April 1, 2007 to March 31, 2008	-	$219,000.00
April 1, 2008 to March 31, 2009	-	$219,000.00

Invoices shall be submitted to Client in conjunction with work logs, activity sheets and similar for Client review and approval at quarterly intervals. Invoices are to be paid within 60 days of receipt. Additional services outside the scope of those in Attachment 1 may only be performed with written approval by the Client, and with that approval, shall be invoiced at the rate of $700 per day. These provisions are subject to appropriation by the LaPorte County Council. Invoice per Client approval of work.

4.   On-Site Presentations and/or Defense. Nexus agrees to provide public presentations, defend and/or support any aspect of these Services in any forum, public or private, as deemed necessary by the Client.

5.   Term, Termination and Suspension. Subject to termination or suspension as described herein, the term of this AGREEMENT shall commence on the earliest date referenced herein and continue for a six- year period. Either party may cancel this AGREEMENT at any time with thirty (30) days notice and for good and just cause. Client may suspend or terminate the provision of Services at their sole discretion for good and just cause (such as untimely and/or inadequate performance, reassessment delay by the Governor, State Legislature, Indiana Tax Court, and/or Indiana Supreme Court). In the event of a suspension of Service provision, the payment of any and all outstanding compensation due and payable in Section 3 shall likewise be suspended. At the resumption of Services, Nexus and Client would make a good faith effort to amend this Agreement concerning due dates for deliverables and a compensation schedule.

6.   Confidentiality. Nexus shall maintain the confidentiality of all Client records, data, information, correspondence of any type and similar. All information related to these Services shall be provided to the Client only, unless otherwise directed by Client, or as so directed by a Court of Law.

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7. **Independent Contractor.** Nexus shall at all times be an independent contractor hereunder, rather than a coverture, agent, employee or representative of the Client. Client hereby acknowledges and agrees that Nexus may engage directly or indirectly in other business and ventures not otherwise proscribed hereby.

8. **Proscribed Activities.** Nexus or its shareholders shall not file any type of real or personal property appeal on behalf of any person(s), corporations or business entities in regards to property owned, held or possessed in LaPorte County, Indiana.

9. **Governing Law.** The AGREEMENT shall be construed in accordance with the laws of the state of Indiana.

10. **Waiver of Breach.** The waiver of any breach of any provision of this Agreement or failure to enforce any provision hereof shall not operate or be construed as a waiver of any subsequent breach by either party.

11. **Entirety.** This AGREEMENT represents the complete and final agreement of the parties with respect to delivery of Services and shall control over any other statement, representation or agreement. Any changes to the Agreement must be in writing, signed by both parties.

12. **Survival.** The provisions of this AGREEMENT relating to confidentiality shall survive the termination of the AGREEMENT.

13. **Captions.** The captions of this AGREEMENT are for convenience of reference only and shall not be deemed to define or limit any of the terms hereof.

14. **Binding Effect.** This AGREEMENT shall inure to the benefit of both parties and their successors and assigns shall be binding upon both parties.

15. **Indemnification.** Both Client and Nexus agrees to indemnify, defend and hold harmless the other from and against any and all costs, expenses and liability, including, but not limited to, reasonable attorney fees, which it may incur in the event of a breach by the other party of its obligations hereunder or arising from acts or omissions of the other party in performing its obligations hereunder.

16. **Contract Representative.** Each party may designate a Contract Representative to serve as the primary contact person for notifications and receipt and/or coordination of Services. The Nexus Contract Representative shall be Frank S. Kelly, 4225 N. Illinois Street, Indianapolis, IN 46208 (317-

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925-7783). The Client Representatives shall be Carol McDaniel for all matters.

17. **Notices.** All written notices shall be directed, if to Nexus, at: 4225 N. Illinois St., Indianapolis, IN 46208; and if to Client, at: LaPorte County Courthouse, 813 Lincolnway, Suite 201, LaPorte, Indiana 46350.

18. **Responsibilities.** The final determination of assessed value and true tax value is and shall remain the Client's responsibility.

19. **Non-Discrimination.** Pursuant to IC 22-9-1-10, Nexus and its subcontractors, if any, shall not discriminate against any employee or applicant for employment, to be employed In the performance of this Contract, with respect to the individual's hire, tenure, terms, conditions, or privileges of employment, because of the individual's race, color, religion, sex, handicap, national origin or ancestry. Breach of this covenant may be regarded as a material breach of contract.

20. **Delays.** Whenever Nexus or the Client have knowledge that any actual or potential situation is delaying or threatens to delay the timely performance of this Contract, they shall within fifteen (15) days provide written notice of the delay to the other party by certified mail, return receipt requested, including all relevant information with respect to the actual or potential cause of the delay.

21. **Subcontracting.** Nexus must obtain the written approval of the Client before subcontracting all or any portion of this Contract. This limitation shall not apply to the purchase of standard commercial supplies or raw materials. If subcontractors are used, Nexus is responsible for contract performance, compliance with terms and conditions of this Contract, and the requirements of federal and state equal opportunity and affirmative action statutes, rules and regulations.

22. **Force Majeure.** Neither party shall be liable for delays or performance failures resulting from and caused by acts beyond the party's control. Such acts shall include acts of God, acts of war, epidemics, communication line failures, power failures, earthquakes, and other similar disasters. In every case the delays must be beyond the control and without the fault or negligence of the non-performing party.

23. **Maintaining A Drug-Free Workplace.** Nexus hereby covenants and agrees to make a good faith effort to provide and maintain during the term of this Contract a drug-free workplace, and that it will give written notice to the Client within ten (10) days after receiving actual notice that an employee of the Professional Appraiser has been convicted of a criminal drug violation occurring in Professional Appraiser's workplace. It is further expressly

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agreed that the failure of Nexus to in good faith comply with the terms of the above, or falsifying or otherwise violating these terms shall constitute a material breach of this Agreement, and shall entitle the Client to impose sanctions against Nexus including, but not limited to, suspension of contract payments, termination of this Agreement and/or debarment of Nexus from doing further business with the Client for up to three (3) years.

In witness whereof, the undersigned have executed this AGREEMENT effective as of the day and year first set forth above.
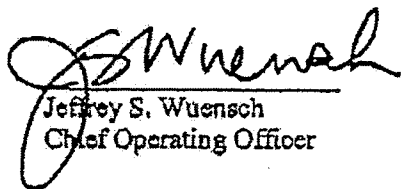
"Nexus"

By: _____ Date 9-7-04.
Frank S. Kelly
President

By: _____ Date 9-7-04
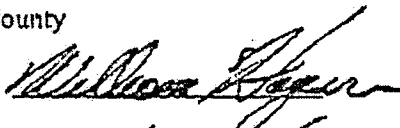Jeffrey S. Wuensch
Chief Operating Officer
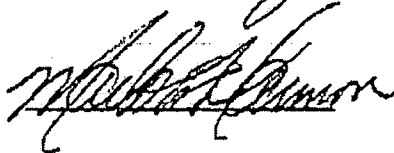
"Client"
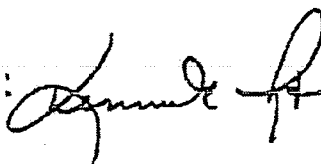LaPorte County
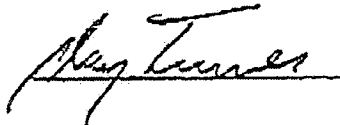
By: _____ Date 6/24/04

By: _____ Date 6/24/04

By: _____ Date 6/24/04

Attest: _____ Auditor 6/24/04

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Attachment 1
Nexus Group Deliverables

Year 1:   2004-05

1. Annual update of LaPorte County Ratio Study (medians, COD's and other statistics as needed).

2. Provide technical support to the County Assessor and Property Tax Assessment Board of Appeals (PTABOA) on all issues.

3. Provide technical support to the County Assessor, PTABOA and to *Meighen & Associates* in regards to appeals (property inspections, data collection, income analysis, expert witness testimony, etc.).

4. Review all existing neighborhood designations, suggest reclassifications, and determine appropriate, updated neighborhood factors. This process would begin with the neighborhoods demonstrating the most serious assessment issues.

5. Land Valuation for all improved and unimproved property classes by property class, area, use and township as appropriate. This included on-site inspections of vacant land sales, extraction of values from improved sales, and/or site valuations as needed.

6. Income/expense information will be collected, sorted, compiled, and implemented to assessments as appropriate. This data will also be used to consider appeals. Capitalization and vacancy rates will be determined. Our initial targets are commercial properties where income capitalization provides a better estimate of value.

7. Residential improvements in areas where the neighborhood factor is deemed high and areas where significant residential-type rental property exists will be data-collected and reviewed in both cost-based assessment and income-based methods.

8. Annual re-examination of all commercial & industrial property with obsolescence.

Years 2-5:   2005-09

In addition to the above-listed items:

9. Beginning in 2005, revisit all commercial & industrial property for any changes in use or other pertinent data in the following manner:

   2005: One-Fourth of all Commercial and Industrial Property
   2006: One-Fourth of all Commercial and Industrial Property
   2007: One-Fourth of all Commercial and Industrial Property
   2008: One-Fourth of all Commercial and Industrial Property

9. Update and/or correct lot sizes, property addresses, plat maps and other parcel characteristics.

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May 22, 2008

To: Tim Rushenberg
From: David Schwab

Re: Response to Dr. Hamilton's Response to DLGF Analysis of Sales Chasing (May 20, 2008)

In two documents received on May 21, 2008, Dr. Thomas Hamilton offers a critique of the DLGF's Analysis of Sales Chasing (May 20, 2008). I have read both documents and offer my response below:

1. Dr. Hamilton continues to maintain that the shape of the sold and unsold property distributions (here referencing skew and kurtosis) invalidates the Mann-Whitney test. No additional evidence is provided to support this claim, and I therefore stand by the conclusions of the previous report.

2. Dr. Hamilton takes issue with the application of the t-test because he claims that (1) the t-test requires normality, even in large samples, and (2) I misapply the Central Limit Theorem in order to sidestep this requirement of normality.
   With regards to (2), I stand by my invocation and description of the Central Limit Theorem. I have neither the time nor patience to provide a detailed exposition of this most fundamental theorem of statistics.
   With regards to (1), Dr. Hamilton calculates the normality of Sold and Unsold Appraised Values (Table 1, report A), which is not the distribution tested in either of the two previous DLGF reports. In any event, the normality of the population is irrelevant because of the Central Limit Theorem, for reasons previously stated.

3. Dr. Hamilton argues that differences in size of sold and unsold parcel counts invalidate the DLGF's study. As no new evidence is offered to support this claim, I again dismiss it without validity.

4. Dr. Hamilton again argues that sold properties are not obtained in a random manner. Taking issue with the term "experiment", which he seems to believe requires a control group, Dr. Hamilton misunderstands the technical usage of this term. Again I lack the time and patience to re-summarize the excellent description of random variables found in Bertsakas and Tsitsiklis (2002) and refer the interested reader to Chapter 1 of their textbook.

5. Dr. Hamilton again argues that sold and unsold properties are not independent of one another. Offering an flawed definition of independence as $P(A \mid B) = P(A)$, which fails to hold when $P(A \mid B)$ is undefined, I find no new evidence and therefore stand by my previous claims.

6. Regarding Dr. Hamilton's dissertation, I invoked it only to illustrate his familiarity with the t-test and not to dispute the merits of using any sort of

regression model for mass appraisal, which is a completely unrelated issue to the current discussion.

7. Regarding the normality plots, again Dr. Hamilton plots the wrong data and so they need not be considered. I note in passing that upon visual inspection the plotted data conforms fairly well to a normal distribution, contrary to Dr. Hamilton's assertion.

8. I asked about Simpson's paradox to refute a dissagregation analysis of Michigan Township performed by Dr. Kelly. I did not intend for it Dr. Hamilton to apply it to his analysis, as this would make no sense.

Rushenberg, Tim

From: Frank Kelly [frank@nexustax.com]
Sent: Thursday, April 24, 2008 7:21 PM
To: 'Marilyn Meighen'; 'Jeff Wuensch'; 'Shaw Friedman'; 'Atherton, Thomas'; Rushenberg, Tim; 'McDonald, Chuck'
Cc: 'McDaniel, Carol L'
Subject: Responses

Greetings,

Please allow me to respond to some of the various charges asserted during this afternoon's conference call. A few points of consideration:

1. The DLGF ratio study for Laporte County 2006 assessments was not mentioned in today's discussion. Can we take that to mean that the corrected analysis only indicates possible 2006 assessment issues (outside of a sales chasing argument) in two areas: Hanna TWP and Hudson TWP vacant residential property? All other property classes appear to be within existing Indiana standards, based on the DLGF's analysis.

2. The Petitioner in this matter, as well as numerous other taxpayers as well often times as some assessment officials, has a basic disconnect of information. In reading the Indiana Real Property Assessment Guidelines version A, as well as past practice up until 2002, the assessment elements of grade, condition, effective age and so on are given great deference. However, the 2002 Indiana Manual places the overall assessment emphasis on the "bottom line value". In fact page 2 of the Manual states in part that assessors shall make whatever changes necessary to arrive at their view of the proper value. The Indiana Tax Court , not just Nexus Group or Frank Kelly, has also weighed in on this subject, in such decisions as:

> http://www.in.gov/judiciary/opinions/pdf/10040601tgf.pdf
> http://www.in.gov/judiciary/opinions/pdf/02100601tgf.pdf
> http://www.in.gov/judiciary/opinions/pdf/02020601tgf.pdf

Our interpretation of the assessment standard, and of these decisions as justification, is that the final assessed value is the only important element of the assessment, not grade, condition or other elements. While the petitioner may wish to overturn the Indiana Tax Court, surely the DLGF does not take that position. While we strive to have consistency in such less-important factors, we do emphasize the bottom line assessments, not the process thereof. With that in perspective, studies of individual elements of assessed value (grade, condition, effective age, etc.) are interesting, but irrelevant.

3. Usage of 2006 sales data. There's been an attempt to mis-characterize our proper use of 2006 or other time period data, and justify Mr. Denne's improper use of such data in his second ratio study. We utilized valid 2006 sales (time adjusted as deemed appropriate) in several property classes to better trend all types of property. That data was therefore included in our analysis of supposed sales chasing to give the prospect of such activity the best chance of showing up. However, we did not include that data for the most part in our 2006 sales ratio study.

Mr. Denne's second ratio study uses 2006 sales almost exclusively to study Laporte County assessments, ignoring the proper time period basis of 2004-2005. There is a substantial and important distinction between those two activities.

Mr. Denne's first ratio study was not discussed, apparently all sides now agree on how flawed that analysis was in noting the large changes in 2005 vs 2006 assessments and forgetting about the change in valuation date.

4. We do indeed dispute an assertion that the various results of the Wilcoxan tests by either the Petitioner and/or DLGF are accurate in the basis of analysis. What that means to the lay-person is that since the circumstances are contrary to the assumptions of the test, the results may give one a wrong interpretation. While the test is recommended by the IAAO, it is clearly envisioned and discussed as a sales chasing test when the assessment data has experienced only a <u>one-year</u> change and nothing else. Multiple year gaps, such as the change in valuation dates in the 05 vs 06 assessments (1999 to 2005) invalidate the results, as do the undisputed reassessment activities conducted in many townships. Applying the test in these cases gives a false positive response, as we undisputedly demonstrated with the results in Michigan TWP. Since Michigan TWP was the supposed worst offender, we have not as yet detailed each and every change in every township that would further invalidate the test. Mis-application of a statistical test is not grounds for a reassessment, but indicative of the need for further education of all concerned in the proper implementation of the test itself under varying circumstances.

   Clearly, we do indeed dispute the findings of the Wilcoxan tests, even our own, as indicative of sales chasing given the 6 year change in valuation date and the reassessment activities county-wide.

   What is undisputed about the change in valuations of sold and unsold property is our comparison of percentage change in assessments between the two groups. That analysis looks at total AV, not just grade, condition, etc. What that evidence shows is that in most cases, the percentage change was very similar between sold and unsold property. The in-depth analysis of every neighborhood in Michigan TWP clearly shows just how similar such changes were, and resultantly, how the Wilcoxan test has given a flawed test statistic, and why one can not rely solely on the Wilcoxan test.

5. While our March 9, 2007 correspondence to Mr. Denne suggested a Wilcoxan test, our opposition to the test subsequently is on the basis that in these particular circumstances, the significant change in basis of Indiana assessments between 2005 and 2006 (6 year change in valuation date) do not meet the criteria of the test. Specifically for Laporte County, the test has even greater problems given the vast reassessment functions since 2004. Many counties had flawed assessments subsequent to 2002; shall Laporte County be penalized for addressing the problems?

6. Laporte County and Nexus Group vehemently deny any assertion of sales chasing. However, failing that, we ask: what is the current adopted Indiana standard on sales chasing? The IAAO Standard on Ratio Studies indicates that the oversight agency should develop such a standard; it does not specify a standard. We agree that statistical tests and other common-sense comparative devices should be implemented in the future. 50 IAC 14 references the IAAO Standard; which says the agency should develop a standard. Since there is no Indiana standard to measure sales chasing that was in effect during the assessment period, nor has one been developed since, the assessments can not violate a non-existent standard.

In summary, we take great umbrage to the Petitioner's unsubstantiated charge that we have knowingly applied false and illegal assessments. Likewise, perhaps the DLGF has taken a similar umbrage with Laporte County having not issued homestead rebate checks. However, neither position addresses the matter at hand.

4/29/2008

The DLGF 2006 ratio study of Laporte County finds only minor issues in some smaller property classes; no significant assessment flaws. Sales chasing can not be proven, given the significant gap between valuation dates, widely varying property in some townships such as Michigan, as well as the reassessment activities since 2002. The Wilcoxan test is a flawed indicator of sales chasing under these circumstances. The simple comparisons between sold and unsold property in percentage change terms shows that in most every case, the solds and unsolds changed very similarly. While we favor a sales chasing standard in the future, the 2006 assessments did not violate common sense, nor any Indiana-adopted standard.

A county-wide reassessment is not supported by the data. At worst, the DLGF could order reassessment for the 2006 assessments of Hanna and Hudson TWP vacant residential property. Laporte County has already addressed one of these property groups for 2007 assessments in striving to produce better assessments.

Regards,
Frank Kelly
Nexus Group, and as representative of Laporte County

4/29/2008